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Sociological and social-psychological factors related to success in business management

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CHAPTER ONE: INTRODUCTION

One of the most important factors in the functioning of American society is rural America's economic system. This economic system, termed "agribusiness" (Larson, 1964) includes:

A. Farming.

B. Manufacturing and distribution of farm supplies.

C. Processing and marketing of food and agricultural products.

It has been estimated that approximately one-third of all employed workers in the United States are involved in these three segments of the national economy (Ogren, 1961).

Agribusiness has a considerable influence on total economic progress:

> The improvement and continual recombining of the human, natural, and man-made resources are essential to economic growth. As growth takes place, agriculture and other segments of the economy become interwoven into a complicated pattern. The productive resources must move from one segment of the economy to another for greatest progress (Smith, 1961, p. 3).

Aside from the considerable effects on the over-all economy, increased agribusiness efficiency also has important consequences for the nation's rural people:

> A nation of rural people most spend most of its manpower and energy in the endless quest for food. Only when men and women can be released from this struggle for food is it possible to produce the other amenities that result in a high standard of living. Thus, America's fabulous economic productivity rests, in a very immediate

> way, on efficiency in agriculture. The place that efficient farming plays in our nation's economic well-being cannot be overlooked or slighted (U.S. Department of Agriculture, 1959, p. 4).
>
> Efficient production is the best single tool the individual farmer can use in his efforts to obtain a satisfactory standard of living. He cannot hope to gain a reasonable living standard with poor animals, low-yielding crops, and high production costs (U.S. Department of Agriculture, 1959, p. 6).

The basic population upon which much attention and research has been focused is the farmers themselves. The farm sector can be considered the base of the industry for it is here that the farm products are manufactured. However, as the majority of farmers moved from the subsistence farming of a century ago to present day commercial farming, there has been an increasing dependence upon local retail farm businesses for purchased products and services on the input side and nonfarm market services on the output side.

Local Retail Farm Businesses

A crucial link in the flow of resources in the agricultural sector is represented by the local retail farm supply and marketing business. These businesses supply farmers with many products and services essential to their operations. The proportions of farm marketing activities handled by local retail farm businesses is even greater than the proportion of supply services provided (Larson, 1964). These firms are also significant sources of advice and guidance for farmers in

carrying out their operations. As this advice and guidance improves, farm production tends to become more efficient; as the supply functions are more efficiently performed, farmers' costs tend to be reduced; and increased efficiency in marketing operations tends to result in greater demand and better prices for farm products as well as greater price stability. Thus, improved efficiency in the local retail farm business tends to lead to improved farm efficiency which has a direct effect on the economy.

The manager

Superior management is often the scarcest resource and very often the most limiting resource in a business. Land, equipment, capital, and labor are usually not as scarce as good management, and these resources are never used at optimum levels without good managers. Thus, one of the most important factors in the efficiency of the local retail farm business is the manager.

There are two primary ways of acquiring good managers--training and selection. Selection and training of effective managers are crucial problems. Both processes assume an adequate knowledge or criteria upon which to base selection and training decisions. However, the work that has been done in the area of manager selection and training has been largely industrially oriented. Very little selection and training research has been done in the agribusiness sphere and even less

in the area of local retail farm businesses. Yet, many of these businesses are experiencing severe problems in manager turnover and selection. There is a need to provide these businesses with data on certain basic characteristics of successful managers which could be used in selection or assist in training. One of the major goals of this thesis is to provide this type of information.

The types of economic structure of the local retail farm businesses include sale proprietorships, partnerships, and family corporations, farmer cooperatives, and public corporations. Because there is a great variation in the type of ownership of local retail farm businesses, and the degree of availability of research funds is limited, this study was restricted to Iowa Farmer Cooperatives.

The farmer cooperative manager

The farmer cooperative manager is not an entrepreneur in the usual sense of the word, for his net income does not depend solely upon the profit or loss of the business (Phillips, 1962). Entrepreneurship *per se* is vested in the members of the farmer cooperative, but the operationalization of entrepreneurship (risk and uncertainty bearing and policy decision making) is often largely delegated to the manager. It is the specific responsibility of the salaried manager "to make the resources which the owners have entrusted to his care as productive as he can..." (Phillips, 1962, p. 7).

Since it is recognized that the managers of farmer cooperatives are key factors in the agribusiness system, a major goal of this thesis is the analysis of the farmer cooperative manager's role. This analysis will be undertaken from a normative viewpoint, i.e., what the role of the "ideal manager" should be. The analysis of the manager's role will include his role attributes (what he is) and his role performance (what he does).

A manager's role performance is a function of two factors. The internal determinants of his role performance consist of his role attributes--the manager's personal characteristics. The external determinants include characteristics of individuals and social systems in his environment. The external determinants to be discussed in this thesis are the cooperative, other actors within the cooperative (the board of directors, and employees), and one group of actors outside the cooperative--advisors.

The degree of success of a manager's role performance will be assessed in two ways:

1. Measuring the extent to which his role performance corresponds to a normative standard (as determined by a panel of experts), and
2. Assessing the economic outcomes of the manager's role performance in terms of the economic success of the cooperative.

The economic success of a cooperative is a result of the performance of many actors, both within and outside the cooperative. Just as the board of directors and employees exert an influence on the manager's performance, the manager in turn exerts a considerable influence on their behavior. As will be indicated in later sections, this influence is in virtually all cases sufficiently pervasive to justify employing economic success of the cooperative as a measure of managerial success.

Objectives

Based on the above considerations, the objectives of this thesis can now be delineated. The general objectives are:

1. To determine the characteristics of cooperative managers and cooperatives that will permit prediction of managerial success as measured by the manager's role performance and the economic success of his cooperative.
2. To develop measuring devices that will evaluate the characteristics determined to have high predictive value.

To assist the accomplishment of these general objectives, the following specific objectives were delineated:

1. Develop an analytical frame of reference, or model, which may be used in understanding factors which may

affect the role performance of farmer cooperative managers, and the economic success of farmer cooperatives.

2. Determine the role expectations held for farmer cooperative managers.
3. Determine the actual role performance of farmer cooperative managers.
4. Determine the economic success of farmer cooperatives.
5. Determine through use of the analytical frame of reference those factors (independent variables) which are related to the role performance of farmer cooperative managers. The objective was to determine the degree of strength of relationship between each factor (independent variable) and role performance.
6. Determine those factors which are related to economic success.
7. To predict the role performance of farmer cooperative managers. The independent variables were analyzed to determine the extent to which the role performance of farmer cooperative managers could be predicted from them. The analysis indicated the extent to which each independent variable predicts role performance, taking into account the effect of other independent variables.

8. To predict the economic success of farmer cooperatives.
9. To explain the relationships among variables with network analysis.
10. To cross-validate the prediction findings and the network relationships findings.

Overview

Based on the above objectives, the two units of analysis in this thesis are individuals (managers) and social systems (farmer cooperatives). The conceptual framework and analysis of data involve both individuals and social systems. In the following chapter, theoretical orientations concerning human behavior, socialization, personality, social systems, formal organizations, the cooperative, and management in the cooperative will be presented. These individual and group factors will be interrelated in the discussion of "role". A conceptual model based on this discussion is presented in which attention is focused first on general individual and social system factors and then more specifically on the managerial role and the cooperative in its task environment.

General hypotheses, sub-general hypotheses, and specific hypotheses are presented in the Derivation of Hypotheses chapter. This chapter also includes definitions of the concepts used in the hypotheses and rationale for each hypothesized relationship.

Methods and procedures used in testing the hypotheses are discussed in the Methods chapter. The field study which provided the data for this thesis is discussed. The operational measures of the concepts contained in the hypotheses are presented.

The findings are presented in three sections. In the Two-variable Analyses chapter the general, sub-general, and specific hypotheses are summarized and the empirical hypotheses used to test each of the theoretical hypotheses are presented. Results of the statistical tests of significance are presented with each empirical hypothesis in a tabular format.

In the Multi-variable Analyses chapter, two regression models developed to predict role performance and economic success are presented. The results of two model-building regressions along with their cross-validations are also presented.

In the Network Analyses chapter the results of the network analysis and its cross-validation are presented.

The final chapter contains a summary of findings, a discussion of relevant conclusions, and suggestions for future research.

CHAPTER TWO: THEORETICAL ORIENTATION

Introduction

The sequential development of this section will be to discuss individual factors and group factors, and then to relate the two together in a discussion of "role". Under discussion of individual factors the topics of human behavior, socialization, and the personality system will be discussed. A general discussion of social systems will be presented, followed by discussions of formal organizations and the farmer cooperative as a special type of formal organization. The next step will be to relate the discussions of individual and social system factors together in a discussion of the role of the manager in the farmer cooperative. The chapter is concluded with the presentation of a conceptual model based on the theoretical orientations presented.

Basic Motivational Forces in Human Behavior[1]

One of the first steps in understanding human behavior is to examine some of the basic characteristics of human beings which affect the way they interpret the physical and social environment.

---

[1]The discussion of human behavior and personality on the following pages follows closely the similar presentation in the author's Masters thesis (Duncan, 1969).

Physiological needs

The nature-nurture controversy will probably never be settled, but many social scientists agree that man is born with certain physiological drives or instincts which motivate him to interact with his environment and develop his personality.

Malinowski assumes that humans have needs for food, reproduction, shelter, etc., i.e. "that human drives are physiological but restructured by acquired habit" (Malinowski, 1945, p. 43). Freud (1950) also emphasized physiology in focusing on the sex drive as a powerful motivating force, but perhaps more generally felt that hedonism and self-preservation were the basic forces behind human behavior.

Malinowski's concept of restructuring of physiological drives by habit, and Freud's concepts of sex and self-preservation were earlier linked together in the theories of Ratzenhofer (1898). He stated that "The individual's impulses of self-preservation and sex are modified by and adapted to the life conditions which he faces" (Cooley, 1902, p. 185).

Tension reduction and anxiety

The self-preservation drive found in the theories of Freud and Ratzenhoffer is probably not perceived as a motivating force by the neonate, but probably appears in the form of a "raw, intense, basic anxiety" (Leary, 1957, p. 13)

which when reduced gives a feeling of security. Thus, as Leary indicates: "The psychological expression of the survival drive of evolution theory is anxiety" (Leary, 1957, p. 14). Harry Stack Sullivan (1947) along with other neo-Freudians such as Horney (1942, 1945) and Fromm (1947) conceived the avoidance of anxiety as the basic motive force of personality.

Sullivan's (1947) approach was similar to Freud's. He felt that the individual's goal is to secure satisfaction without incurring much anxiety--the relaxation of the tension of anxiety leads to a feeling of security. Karen Horney (1945) also conceived man as being motivated not primarily by satisfaction of instinctual desires, but by safety and avoidance of anxiety. Fromm's (1947) views were similar to Horney's: he saw man's basic drive as a need for security or "escaping insecurity".

Anxiety was an interpersonal phenomenon for the above-mentioned theorists. For Horney it involved the feelings of helplessness and danger; for Fromm, isolation and weakness; and loss of self-esteem for Sullivan. Basic anxiety for the infant is fear of abandonment (he cannot yet understand the complex concept of death). From the moment of his birth, man's survival depends on the adequacy of his interpersonal relationships; the human infant has little physical capacity for dealing directly with the physical environment.

Socialization

As the child interacts with members of his family, he is reinforced by anxiety reduction. Through this interaction the child soon learns to cognize and he develops a self-concept. As the child matures he becomes aware of significant symbols--mutually understood gestures. A language of mutually understood verbal gestures is soon acquired. As Mead (1934) has pointed out, the gesture and language are precursers to the development of a self-concept. "The gesture mediates the development of language as the basic mechanism permitting the rise of the self in the course of on-going social activity" (Martindale, 1960, p. 355).

The mastery of language leads to reflexiveness, the key to the development of the self:

> It is by means of reflexiveness, the turning back of the experience of the individual upon himself, that the whole social process is thus brought into the experience of the individuals involved in it. Reflexiveness is the essential condition, within the social process, for the development of mind (Martindale, 1960, p. 357).

Thus, through reflexiveness the individual can become an object to himself; this is possible only because of societal interaction and language. Through the use of the significant symbol the individual can take the role of those with whom he interacts. "Some aspect of society enters into the person with every different person with whom he associates" (Martindale, 1960, p. 357).

The organized community or social group which gives to the individual his unity of self may be called "the generalized other" (Mead, 1934). In this first stage of development of the self the particular attitudes of other individuals (especially family members) toward one's self are organized; in the second stage the social attitudes of the generalized other toward one's self are organized. These attitudes of the generalized other are internalized into what is commonly called the super ego or the individual's ideal self. Thus, the super ego and generalized other link public and private.

Murray (1938) and others have perceived the super ego as internalized cultural standards, with the ego ideal being the related image of what the individual wants to become. Thus, through his perceptions of the attitudes of others the individual develops an ideal self, and a perceived self, i.e., conceptions of his actual self.

Self-esteem

Many theories have used the concepts of ideal and perceived self as being the key factors in the individual's determination of self-feeling or self-esteem. One of the earliest unions of these concepts was proposed by William James (1948).

James discussed the feelings and emotions of self which he differentiated into two types--self-complacency and self-

dissatisfaction. These concepts could be presented as defining ends of a continuum of self-esteem. James defined self-esteem as a quotient in which pretensions form the denominator and success the numerator:

$$\text{self-esteem} = \frac{\text{success}}{\text{pretensions}}$$

As Martindale indicates--

> Among the ways of handling the ratio are the range of phenomena varying from a frantic extension of striving to ascetic withdrawal of self-expectation (Martindale, 1960, p. 342).

In either case a basic objective of the individual is to maximize self-esteem.

Other theorists have conceptualized a similar mechanism as a drive or need for self-actualization. Goldstein (1940), Maslow (1943), and Rogers (1965) all perceived self-actualization as being a basic driving force behind man's behavior. For Maslow self-actualization was the last in an heirarchial order of goals men strain to reach. Rogers noted the intensity of emotion related to things that were significant for self-enhancement, and saw this as the basic drive--the need to actualize, to maintain, to enhance.

Self-esteem, following Mead's theory, (Mead, 1934) is based on the values of others through the process of socialization. Thus, as Leary (1957) indicates, it is an indirect form of the approval of "crucial" others. And, as previously discussed, the greater the approval from others, the less will be

the individual's anxiety. Thus, these two basic motivational forces of enhancement of self-esteem and avoidance of interpersonal anxiety appear to have similar aims: the avoidance of derogation and rejection by others.

The basic anxiety involving fear of abandonment motivates the child to interact in interpersonal situations to decrease this anxiety. This interaction leads to the development of a self-concept and an ideal self. The focus of anxiety avoidance is no longer a generalized fear of abandonment; it has progressed into a striving to maintain or enhance self-esteem. But it is related to the initial anxiety for it is still basically a fear of rejection or social disapproval.

This relationship between esteem and anxiety is made clearer by fitting these concepts into Freud's theory (1950). For Freud, the super ego (ideal self) is the prototype of what the ego (perceived self) is striving for. Successful striving brings pleasure (esteem), unsuccessful striving brings displeasure (anxiety) or danger. Again, the basic striving of the ego can be seen as maintaining esteem and avoiding anxiety.

Trait development

As the individual interacts with his environment he learns certain basic ways of orienting himself to situations which are reinforced by reduction of anxiety and maintenance or enhancement of self-esteem. Psychologists and sociologists have developed a plethora of systems for describing the results of

this socialization process in terms of basic characteristics of actors. Psychologists have employed the construct "trait" to refer to "...any enduring or persisting character or characteristic of a person by means of which he can be distinguished from another..." (English & English, 1965, p. 560).

Allport (1937) delineates several basic types of traits: mood or temperament, motivational, stylistic, and primary and secondary traits. Eysenck (1947) lists the following categories of traits: cognitive (intelligence); conative (character); affective (temperament); and somatic (constitution). Cattell (1966) speaks of dynamic traits (motivation, action, purpose); temperament traits; and ability or cognitive traits. He also delineates surface traits (a collection of trait elements), and source traits (which combine to produce surface traits). Dynamic traits are divided into: 1) basic drives, and 2) acquired interests: attitude, sentiment, complexes, super-ego, and ego.

All three theorists discuss some type of temperament trait, and Allport's motivational traits, Eysenck's conative traits, and Cattell's dynamic traits all seem to be referring to the same type of concept. Both Eysenck and Cattell delineate cognitive traits, but Cattell combines them with ability. All of the traits outlined by Eysenck and Cattell seem to perform some useful function for the individual; to these, Allport adds stylistic traits, which seem to perform

no particular function, but are just a way of behaving that is unique to the individual. Allport also categorizes traits in terms of pervasiveness (primary and secondary); Cattell categorizes traits in terms of depth within the personality structure (source traits and surface traits).

These varied approaches all seem to offer a meaningful way of categorizing traits, but the diversity in terminology becomes confusing. In integrating these theories, several categories based on content can be set up: temperament (being fairly constant) or mood (relating to general affect, but changeable); motivational traits (those traits that motivate the individual); cognitive traits (having to do with cognitive capacity and intelligence); ability traits (physical as opposed to mental); somatic traits (pure physical capacity regardless of ability); stylistic traits; general vs. particular traits; and trait depth, including the range from cognized behavioral traits to unconscious dynamic traits.

These trait categories suggest a further grouping into a dichotomy of personality traits and biological traits.[1] For purposes of this thesis, all traits and other more specific characteristics of actors that contribute a directional component to an actor's orientation to his situation will be conceived as comprising the actor's personality system.

[1]Suggested by the writings of Parsons (1959a, p. 647-651).

Traits and characteristics that involve only physical ability or capacity will be defined as belonging to the actor's biological system.[1]

Of the traits discussed in the review of trait typologies above, temperament, mood, motivational, and cognitive traits are included under the definition of "personality system". Ability and somatic traits are included under the definition of "biological system". Stylistic, general, and specific traits can be found in both the biological and personality systems. Trait depth applies only to personality factors.

When attention is directed back to the problem of selection of an incumbent for a particular position within a social system, the basic concern is usually with two basic aspects of the personality system--motivational and cognitive traits, i.e. what the candidate knows how to do, and what he is motivated to do. Thus, although the biological system interpenetrates and affects the personality system, for purposes of this thesis no further consideration will be given to the biological system. Attention will be focused on the personality system. Although temperament and mood are important considerations in any study of role behavior, no information was obtained on these aspects of the personality system in this study, and they too will be eliminated from further consideration.

[1] For a further discussion and justification of this classification, see Parsons (1959a, pp. 647-651).

The Personality System

Introduction

Parsons has defined the personality system as consisting of internalized value patterns, social objects, and motivational orientations (need dispositions) (Parsons, 1951). He has stated (Parsons, 1951) that the fundamental, and only units of the personality system, are need dispositions. However, what he has defined as need dispositions has varied. He sometimes includes values as needs (Parsons, 1951), but at other times he defines values and role expectations not as needs, but as factors that integrate needs within the personality system (Baldwin, 1961, p. 158). If one ignores Parson's discussion of social objects, the components of the personality system may be categorized as value patterns and motivational orientations.

Dubin (1960) in summarizing and evaluating Parsons' work in this area comes to the same conclusion as above. He indicates that Parsons' conception of an actor's orientation to the situation (his personality system) has two basic components--motivational orientation (with cognitive, cathectic, and evaluative components) and value orientation. Thus, according to Dubin, an actor's orientation toward objects can be conceived in terms of a motivational orientation, and a value orientation, which, when combined, yield an action orientation.

Parsons' response to Dubin (Parsons, 1960a) indicated that he in essence agreed with Dubin. Parsons equated motivational orientation with the more general "orientation sub-system" in his new conceptual scheme.[1] He equates value orientation with the adaptive sub-system, and action orientation with types of output.

Parsons' and Dubin's inclusion of cognitive orientation as an aspect of motivational orientation is still confusing to this author. Although it is obvious that the two factors cannot be completely divorced, separating the cognitive-affective factor (motivation) from cognition seems to add conceptual clarity. If this separation is made, the actor's personality system can be viewed as consisting of cognitive, motivational, and value orientations. With the exception of the addition of "value orientations", these are the same components of the personality system included in the discussion of psychological trait typologies.

Parsons has included role expectations in several of his definitions of the personality system. Role expectations are obviously not general characteristics similar to the traits and general orientations that have been discussed to this point.

In early writings Parsons (1951) defined role expectations as need dispositions, but in later writings (Parsons and Bales,

[1]Which is meant to apply to cultural and social systems as well as personality systems (Parsons, 1960a).

1955) it appears that "...a role is not a need-disposition as such but is a sub-system of the personality..." (Baldwin, 1961, p. 160). This treatment of role orientation as a sub-system of personality will be followed in this thesis.

Status-role orientations will be viewed as being affected by and integrated with the actor's general personality orientation, and his biological system.

Status-role orientations within the personality will be interpreted as having the same basic components as are found in an actor's general personality orientation, i.e., motivational, cognitive, and value orientations.

The components of the general conceptual model based on the discussion to this point are presented in Figure 1. Merton's concepts of status sets and role sets (Merton, 1957) are employed to indicate past and present social systems in which an actor has played a role.

General socialization is seen as resulting from an individual's participation in social systems making up his past status set. An individual's current status set is made up of social systems in which he currently plays a role. For any given focal social system, an actor's status-role orientation is seen as contributing an orientation to other actors within the system and other actors within the focal social system's role set (individuals or social systems).

Attention will now be focused on the components of an

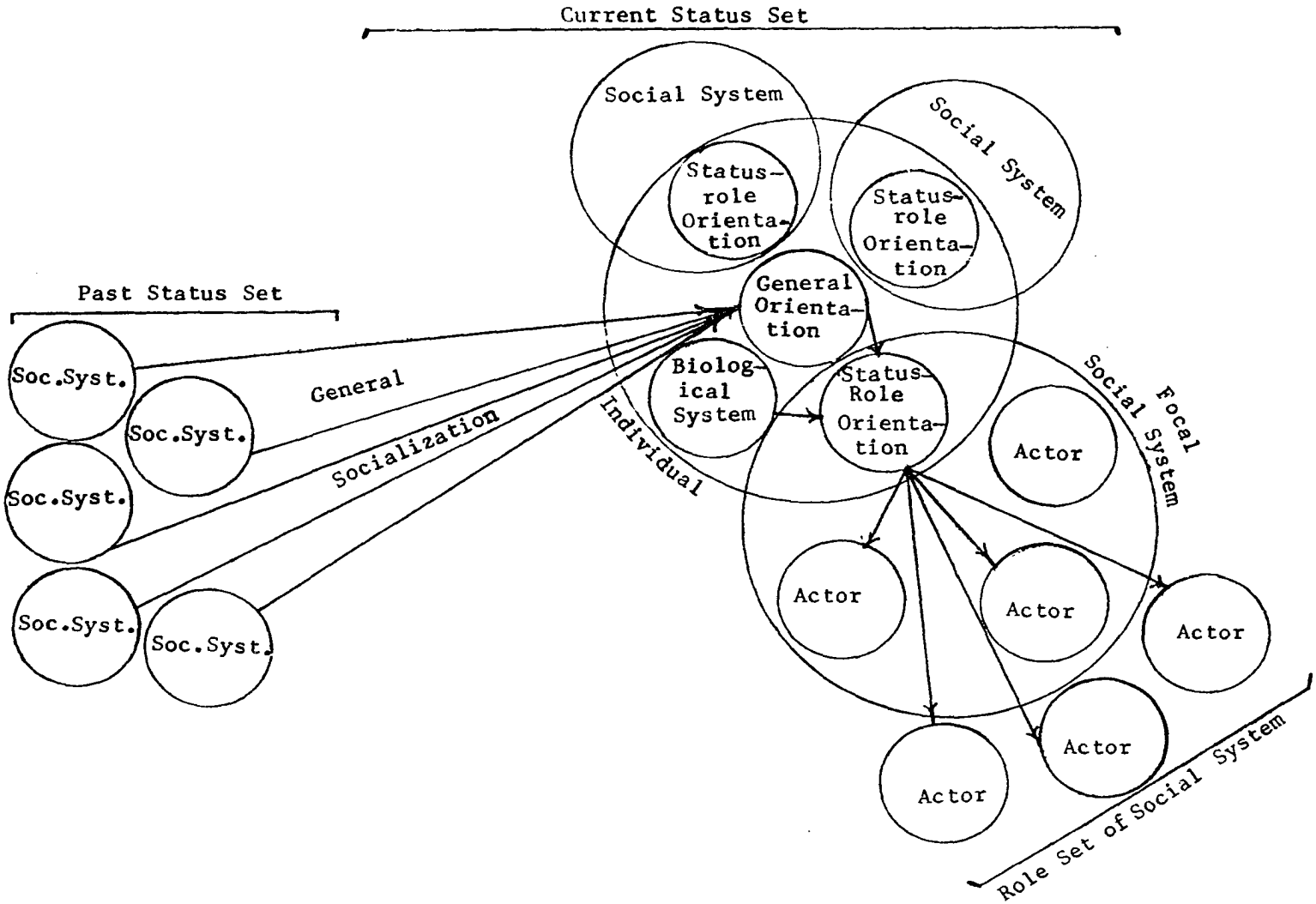

Figure 1. General conceptual model

actor's motivational, cognitive, and value orientations.

Motivational orientation

In this thesis motivation will be defined as "... any organismic state that mobilizes activity which is in some sense selective, or directive, with respect to the environment" (English and English, 1965, p. 247). English and English discuss several classes of motivation including: attitude, drive, goal, habit, motive, need, sentiment, temperament, and value. If temperament is disregarded, the remaining constructs might be placed into three classes: those constructs that refer to goals, those that refer to behavioral predispositions or infer behavioral predispositions from observance of consistent patterns of behavior, and values. In this thesis values are treated separately from motivations;[1] the other two categories of goals and behavioral predispositions are discussed below. Motivational orientation can then be defined as the set of goals and behavioral predispositions that influence an individual's behavior.

Goals The constructs "motive" and "need" are closely interrelated, with both constructs referring to an event within the individual that initiates behavior toward a goal. New-

[1]If a value is internalized it has motivational properties, but no distinction is made in this thesis between values that are internalized and those that are merely conformed to.

comb (1950) and Shibutani (1961) use "motive" in referring to objectives or personal goals. Berelson and Steiner define motive as "...an inner state that energizes, activates, or moves (hence "motivation"), and that directs or channels behaviors toward goals" (Berelson and Steiner, 1964, p. 240). The construct "drive" refers to an internal impulse that "motivates" an individual to satisfy a "need". Drive is expressed as needs to be satisfied by Berelson and Steiner (1964) and Rogers (1965). "Goal" refers to a condition sought to satisfy a "need". All of these constructs imply a behavioral tendency oriented toward the attainment of some goal.

Human behavior is goal-oriented. Individuals are oriented toward the attainment of a multiplicity of goals which are arranged hierarchically according to differing criteria. There may be various levels of attainment as well as various expected levels of realization of a selected goal.

Since it is difficult to determine in many instances whether particular characteristics fall into the class of goal-oriented traits aimed at need satisfaction, with the exception of discussion of "goals", attention in this thesis will be focused on behavioral predispositions without attempting to trace these dispositions back to specific needs or drives. Although one could argue that behavior that is motivated by strong needs is apt to show greater consistency over time and manifest itself in more situations than

behavior that can only be attributed to predispositions, the armchair imputation of needs, the existence of which cannot be verified, seems to serve no useful purpose.

Behavioral predispositions Attitude refers to a predisposition to behave toward a particular psychological object. Sentiment is an emotional disposition toward a psychological object. A behavioral trait is a pattern of behavior exhibited in a wide variety of circumstances. A habit is a pattern of behavior which is automatically repeated with little or no cognitive reflection.

All of these constructs refer either directly or indirectly to behavioral predispositions (explicit in the definition of attitudes, and implicit in the definitions of the other constructs.) All of these constructs may be classed under the broad rubric of motivation in that they all refer to or are indicators of internal stimuli to behavior. Yet, they differ from the goal-related motivational characteristics by virtue of the fact that there is no reference made to needs or internal tensions that set off drives directed at satisfying needs by the achievement of some goal.

Interpersonal traits Behavioral traits were earlier defined as patterns of behavior exhibited in a wide variety of circumstances. This thesis will focus on only one type of trait--the interpersonal trait. One

usually speaks of behavioral tendencies toward other people in terms of attitudes.

> [n]o one has a completely different set of attitudes toward other people for each of his different role relationships. On the contrary, such attitudes are rather highly generalized. A person tends to classify and perceive other people in the same ways and to have similar attitudes toward them, in many different kinds of role relationships... After all, there is a common element in all role relationships--one's self (Newcomb, 1950, p. 457).

These similar attitudes are conceptualized as interpersonal traits in this thesis. These motivational traits consist of the interpersonal security operations developed by individuals in their attempts to avoid anxiety and maintain self-esteem.

Whether or not an individual is aware of his behavior or the motivation behind it, he overemphasizes certain types of interpersonal responses and underemphasizes others. Thus, as Sullivan (1947) has indicated, the individual's personality at the interpersonal level becomes essentially a pattern of interpersonal responses employed to reduce anxiety, ward off disapproval, and maintain self-esteem. This system soon becomes almost self-perpetuating, for these interpersonal responses tend to invite reactions from other persons that lead to a repetition of the same response.

Two basic interpersonal orientations will be discussed in the following section, followed by a model interrelating them.

Power The interpersonal striving for power has been witnessed in man by social theorists for centuries. Ibn Khaldun, considered by some to be the first sociologist, wrote about a drive for power in the twelfth century. In the sixteenth century Giambattista Vico spoke of man's need for power resulting from a reshaping of his desire for equality by society. Many years later, the concept "power" appeared in the writings of Adler who saw a superiority complex frequently resulting as a sort of reaction formation against feelings of inferiority.

Erich Fromm (1947), a neo-Freudian stressed these same factors from a different viewpoint. Fromm spoke of submission and power as man's two possibilities to transcend his environment. Through power man can make the environment part of himself; through submission he can become part of the environment.

Carl Rogers has also stressed the power want (Rogers, 1965). He has stated that the basis for incorporating an event into the self is the person's awareness of a feeling of control over some aspect of his varied experience. This concept of control is at least implicit in most of the discussions of a dominance-submission continuum, whether arrived at by submitting to a force that will help control the environment or exercising power to which the environment yields.

Love-hate Another interpersonal dimension apparent to writers for thousands of years is the love-hate dimension. Freud saw these two factors as being instinctual in nature. Freud in summing up his theories of individual motivation stated the following concerning these "two basic instincts":

> According to our hypothesis human instincts are of only two kinds: those which seek to preserve and unite--which we call 'erotic", exactly in the sense in which Plato used the word 'Eros' in his Symposium, or 'sexual' with a deliberate extension of the popular conception of 'sexuality'--and those which seek to destroy and kill and which we class together as the aggressive or destructive instinct. ...Thus, for instance, the instinct of self-preservation is certainly of an erotic kind, but it must nevertheless have aggressiveness at its disposal if it is to fulfill its purpose (Freud, 1949, pp. 280-282).

These four concepts of dominance-submission and hostility-affection have been integrated into personality theories since the time of the ancient Greeks. Hippocrates was one of the earliest to combine them in a theory of human behavior: hostile strength (dominance + hostility) may be equated with the choleric temperament; hostile weakness (hostility + submission) with the melancholic; friendly weakness (affection + submission) with the phlegmatic; and friendly strength (dominance + affection) with the sanguine.

Recent theorists as divergent as Horney and Parsons have developed similar conceptual frameworks. In the Neurotic Personality (Horney, 1945) delineated two basic drives--cravings for affection and power. Talcott Parsons has

described a similar conceptual framework entitled the "paradigm of motivational process" (Parsons et al., 1953, p. 73). He states that

> ...neither the tendencies toward deviance nor those toward re-equilibration, that is, toward 'social control' could occur in random directions or forms. Deviance was shown to involve four basic directions according to whether the need was to express alienation from the normative pattern--including the repudiation of attachment to alter as an object--or to maintain compulsive conformity with the normative pattern and attachment to alter, and according to whether the mode of action was actively or passively inclined. This yielded four directional types, those of aggressiveness and withdrawal on the alienative side, and of compulsive performance and compulsive acceptance on the side of compulsive conformity. It was furthermore shown that this paradigm, independently derived, is essentially the same as that previously put forward by Merton for the analysis of social structure and anomie (Parsons et al., 1953, p. 68).

Viewed graphically one can again see the four humors of Hippocrates. The horizontal axis divides the four traits into dominance above the axis and submission below.

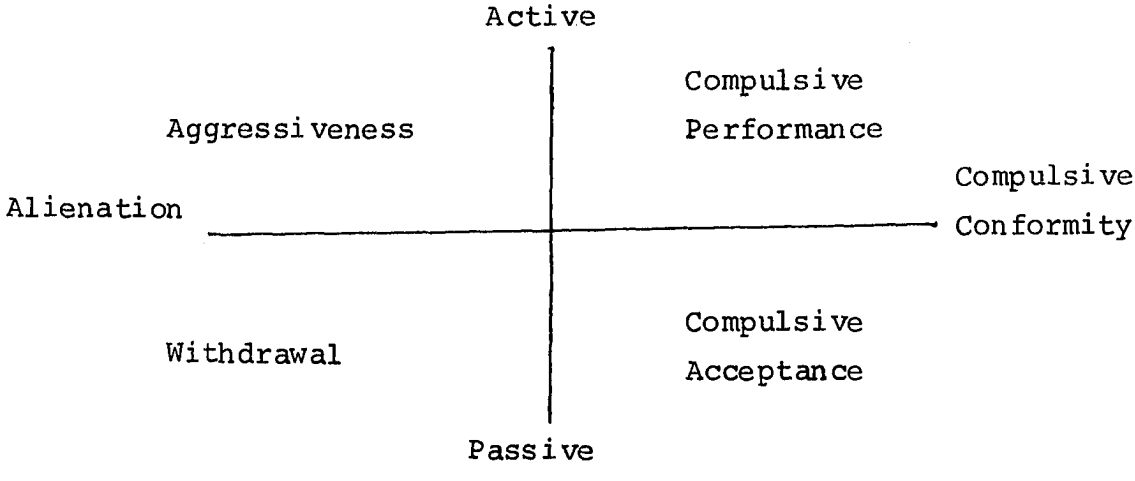

Figure 2. Parsons' paradigm of motivational process

The interpersonal response trait paradigm

These notions were expanded even more, and more explicitly defined, in a theory presented by Timothy Leary (1957). Leary undertook one of the most pervasive integrative studies ever done in the area of personality. A Kaiser Foundation research team of which Leary was a part reduced hundreds of interpersonal behavior terms into sixteen basic interpersonal themes. These themes were then interpreted as being variants of power and affection-hostility factors.

> When dominance-submission was taken as the vertical axis and hostility-affection as the horizontal, all of the other generic interpersonal factors could be expressed as combinations of these four nodal points (Leary, 1957, p. 64).

These four primary factors and the interpersonal themes may be pictured graphically as follows in Figure 3. The interpersonal themes are indicated within the wedge-shaped sections of the circle along with the general motivations that accompany contiguous themes. The behavior "pulled" from other individuals by any given interpersonal theme is indicated along the outside circumference.

Attitude Interpersonal traits are general tendencies toward action that lead to general patterns of action pervading an individual's behavior, but to predict or understand behavior in a particular situation toward a particular object or set of objects, one must look at a more

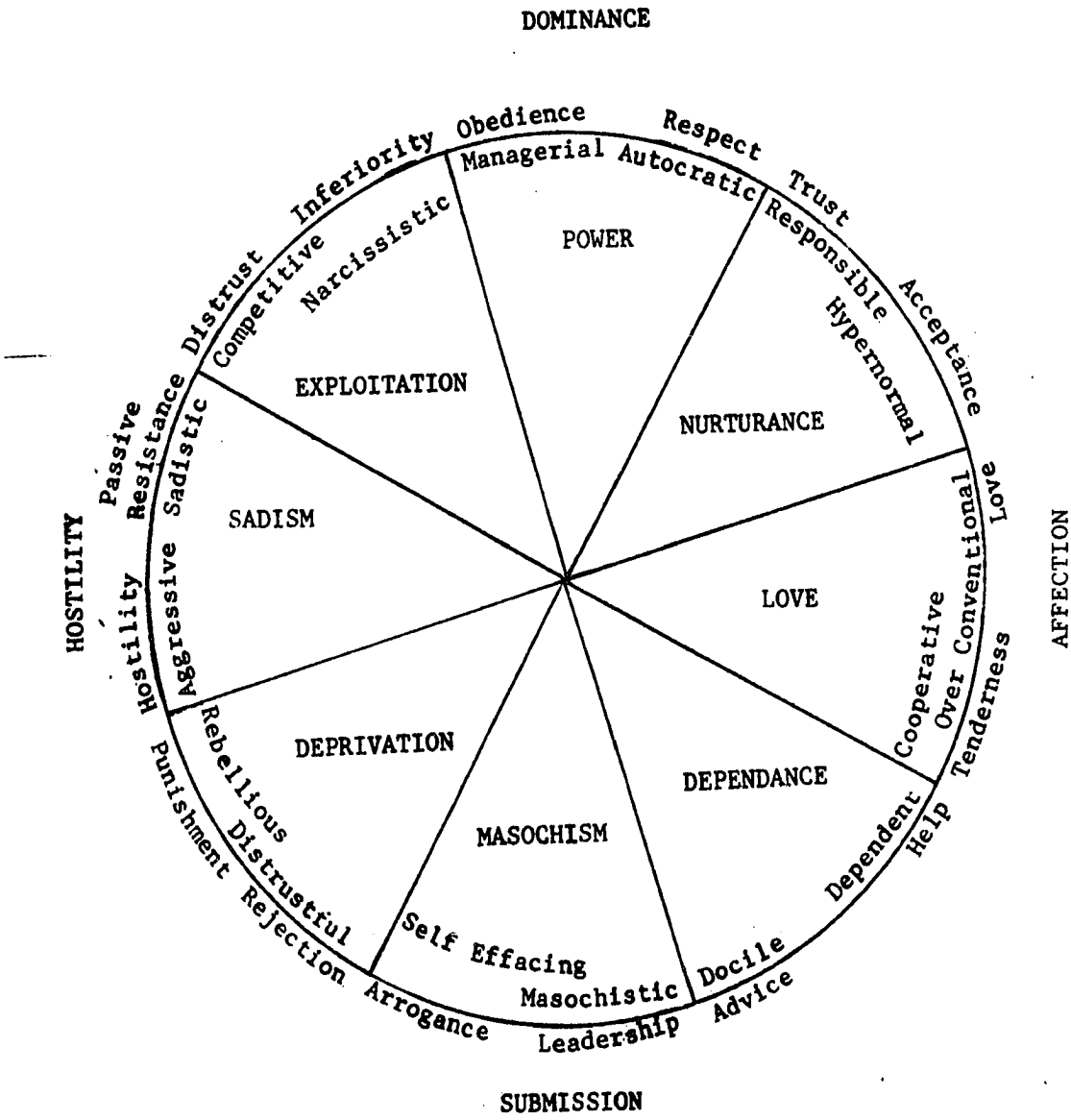

Figure 3. Interpersonal themes

particularized trait, or attitude.

One of the key differences between attitudes and traits is that the attitude has a specific psychological object, and like traits in general, but unlike interpersonal traits, attitudes may apply to ideas, and physical objects as well as people.

Attitudes also have affective and cognitive components. Attitudes are ego-involved and thus necessarily have affective associations. Since all attitudes deal with psychological objects which are a part of the individual's cognitive world, they contain certain existential propositions about the nature of these objects. Although this is also the case at the interpersonal trait level, the response tendency at that level is far more generalized and often occurs without cognitive awareness. Allport more precisely defined this relationship when he stated:

> Variable though they are, still in every mature personality certain central traits can normally be identified. So too can secondary traits, though these are less distinctive, less prominent, and more circumscribed in their operation. Whenever a disposition is so little generalized that it is aroused by only a narrow range of stimulus situations, it is more properly called an attitude than a trait (Allport, 1937, p. 341).

Thus, at the behavioral level where a specific stimulus elicits a specific response, "attitude" is obviously the concept to be employed in description of the motivation behind the action.

Allport (1935) lists 16 definitions of attitude, but each of these definitions "...regards the essential feature of attitude as a preparation or readiness for response" (Allport, 1935, p. 805).

Sherif and Cantril (1945) also examined several definitions of attitudes and concluded that an essential feature for definition of attitudes was a "function state of readiness" or a "predisposition to action". To differentiate attitudes from other states of readiness of the individual, they added the following criteria:

1. Attitudes always imply a subject-object relationship.
2. Attitudes are formed and formed in relation to objects, persons and values...attitudes are not innate but are formed as a result of the individual's contact with his environment.
3. Attitudes have affective properties of varying degrees.
4. Attitudes are more or less enduring states of readiness (Sherif and Cantril, 1945, p. 301).

Attitudes can be divided into classes on the basis of their psychological objects--physical objects, social objects, or cultural objects (Parsons, 1951).

Of particular interest in this study are attitudes toward people, including the self. As indicated earlier, one of the basic motivating forces of individuals is the maintenance and enhancement of self-esteem. As Shibutani (1961) and Krech et al. (1962) point out, self-conception is important, since a man tries to live up to the standard of what he

thinks he is.

In the earlier discussion, self-concept and self-esteem were treated as general characteristics. Aside from this general conception, an actor has an attitude toward himself in each role that he plays. James (1948) pointed out that a man has as many social selves as there are individuals about whose opinion he cares and that the particular social self of a man is his image in the eyes of his role set. Any given role set consists of complementary role players who are referents or reference groups regardless of whether they involve immediate reciprocal behavior with the individual. One has an image of self for each role one plays rather than for each position he occupies, since each position has a set of roles for one to play (Merton, 1957).

Attitude toward oneself as a player of a particular role and attitudes toward others and objects relevant to the role are closely linked together. One may reveal the other, or vice versa.

Sentiment and habit Gould and Kolb (1964) have defined sentiment as an element of affect that is relatively broad and undifferentiated. This author has interpreted "sentiment" as a type of attitude in which emphasis is almost entirely on the affective as opposed to the cognitive component. Since the construct "sentiment" is considered to be a type of attitude, no further consideration

will be given it.

It is undoubtedly of some importance in predicting behavior to know whether or not a trait or attitude has become habituated, but concern in this thesis has been limited to traits and attitudes with no attempt to ascertain the amount of habituation that may be involved in these predispositions.

Cognitive orientation

The most common cognitive trait is intelligence. Another general cognitive characteristic to be considered is symbolic skills. More specific cognitive characteristics can be classified under the concepts of "knowledge" and "belief". Knowledge will be conceived as a specific class of beliefs. A "belief" is a statement about reality accepted by an individual as true. Knowledge is a belief accepted as true which has been tested by the scientific method. Attention in this thesis will be given only to these more specific cognitive characteristics, although certain relationships of several variables to intelligence might be inferred.

Intelligence Intelligence is usually not perceived as a single unitary trait such as Spearman's "G" (Spearman, 1927, p. 411). English and English (1965) point out three constructs frequently employed in attempts to state its connotations: ability to deal effectively with tasks involving abstractions; ability to learn; and ability to deal with new

situations. The classical investigation by Thurstone and Thurstone (1941) indicated seven general factors. There is still little agreement among psychologists on the number of factors involved in intelligence.

Some consensus has been attained on the effects of heredity and environment. Cronbach (1954, p. 210) indicates that about 75 percent of the variance in intelligence can be accounted for by hereditary factors, 21 percent by environment, and about 4 percent by accidental factors.

The amount of an actor's intelligence obviously sets upper limits to his behavior. Intelligence affects the amount of knowledge that an individual can acquire and the rapidity with which he can assimilate it.

Symbolic skill Symbolic skill is important in making decisions on future events in the process of role playing. Bohlen and Beal (1961) indicate that symbolic skill is used to organize past experiences and so project into the future to determine if alternative means available in the past are still available, and acceptable or preferred. One can organize a course of action by the use of symbols, without immediately experiencing the actual action, and formulate the course of action based upon symbolic organization of judgments made on past experiences.

One acquires and may increase symbolic skill by learning from past experiences and formal educational training. Without

symbolic skill, knowledge is inconceivable. Symbolic skill is a means and knowledge a product, which in turn may enrich symbolic skill.

Beliefs and knowledge The discussion of cognitive characteristics to this point has centered on cognitive capability and symbolic skills. These capabilities are necessary in the acquisition and integration of knowledge to which discussion will now be directed.

Symbolic skill enables one to organize past experience into an integrated set of beliefs. Belief includes what one has organized out of both direct and indirect experiences with symbolic skills. Beliefs are defined as propositions about the universe which are believed to be true. One's beliefs may include some knowledge. The primary concern with cognitive factors in this thesis is with this class of beliefs. Knowledge refers to scientific explanations of relationships between phenomena (Bohlen and Beal, 1961).

An actor's knowledge (or lack of it) has a direct bearing on the course of action chosen. In general, the greater the amount of knowledge possessed by an actor the greater will be his opportunity to accurately evaluate the situation, choose from among the perceived alternatives, and initiate what to the actors appears to be the most rewarding course of action.

This thesis takes a normative position in relation to the individual's constructed world of relationships among

phenomena. An individual's knowledge will be defined as the degree to which the individual's constructed relationships agree or disagree with relationships supported by scientific inquiry in reference to the phenomena under investigation.

Value orientation

Kluckhohn and others define value orientation as follows:

> A value orientation may be defined as a generalized and organized conception, influencing behavior, of nature, of man's place in it, of man's relation to man, and of the desirable and nondesirable as they may relate to man - environment and interhuman relations (Kluckhohn et al., 1951, p. 411).

In this thesis value orientation will be conceived as a set of standards. A standard will be defined as "...a selective principle which has normative meaning to a relevant actor", (Parsons, 1960b, p. 326) and guides his behavior in relation to his external situation.

The most general standards are cultural standards or values. The various social systems that the individual participates in also provide standards for behavior that apply to all members of that system--norms. Finally, social systems impose certain standards on an individual by virtue of the fact that he is an incumbent of a particular status role--role expectations. As Parsons has indicated, all of these standards provide an integrating force for all the motivational and cognitive aspects of an individual's personality.

Values Parsons, in a discussion of the structural components of social systems states, "[v]alues are modes of normative orientation of action in a social system which define the main directions of action without reference to specific goals or more detailed situations or structures" (Parsons, 1960b, p. 171).

For Kluckhohn et al., (1951), value is a conception of the desirable which influences selection from available modes, means, and ends of action, and it places things, acts, ways of behaving, and goals in the approval-disapproval continuum. Thus, values provide individuals with a general base for interpretation of stimuli.

Whether from the standpoint of the individual or the social system, values tend to be organized into systems. "Values are not simply distributed at random, but instead, are interdependent, arranged in a pattern, and subject to reciprocal and mutual variation" (Williams, 1957, p. 385). The relationship between individual value systems and those of a society or a social system is discussed by Parsons and Smelser.

> The most important similarity between personality systems and social systems is that they interpenetrate if they both possess common content of value patterns. But there are two fundamental differences as well: 1) since the contents of personality value patterns are derived by the internalization of social role-objects in socialization processes, their hierarchy differs from that of the values of the social system. This is because the individual is socialized in specialized agencies (e.g. the family and the educational system) and in a determinate time sequence, not in, and through, the whole social structure all at once. 2) the specific goals and the adaptive and integrative exigencies of

> personalities differ from any social system. The value content is, in its implementation directed toward different problems (Parsons and Smelser, 1956, pp. 176-177).

Values which may be identified as characteristic of a particular social system may be held with varying degrees of intensity by various individuals who are members of that social system. In the above quotation, two situational factors which might influence an individual's value system were pointed out--differences in the socialization process and differences in individual problems and situations. The varying degrees of intensity with which individuals hold values in a social system will tend to result in individual differences in motivational and cognitive orientation.

Norms Homans (1961) points out that norm refers to an idea in the minds of the members of a group, an idea that can be put in the form of a statement specifying what the members or other men should do. In this thesis norms will be interpreted as standards for behavior in a social system to which all members are expected to conform, and conformity to which is enforced by positive and negative sanctions. A number of sociologists interpret values as generalized norms. Thus, two categories of norms can be delineated--general norms or values, and specific norms. Values, as discussed in the preceding section, are general standards of behavior that are applicable to a wide variety of situations. Specific norms

govern behavior in a narrower range of situations.

Attention in this thesis will be directed only to general norms or values. Assumptions will be made in the next chapter about cultural values that are generally found as norms in formal organizations.

Role expectations A role expectation refers to "... an evaluative standard applied to an incumbent of a position" (Gross et al., 1958, p. 58).

Sarbin (1954) indicates that a person cannot enact a role for which he lacks knowledge of role expectations, which one must acquire through experience. Gullahorn and Gullahorn (1963) discuss the process of acquiring role expectations. Before entering a position, ego is engaged in role definition. Definition of a role before entering the position has a great deal to do with one's past experience, and this also creates the variation in ideas of role expectations among different individuals who may take the identical position. As he becomes an incumbent, he must achieve some conclusion regarding the total configuration of expectations defining the specific position. Ego takes the role of others (Mead, 1934), and then adopts the perspective of the significant others. From Ego's viewpoint, role can be defined as the union Ego achieves between his own definition and role expectation of the alters as perceived by the Ego (Gullahorn and Gullahorn, 1963).

The topic of role expectations will be discussed at some length in the latter part of this chapter along with other conceptual components of the construct "role".

Social Systems

Action and interaction

Attention in this section will be focused on interaction, and on the systemic aspects of interaction. Loomis (1960, p. 2) states four assumptions about human action. Action: 1) takes place in situations including relevant aspects of the physical and social world, 2) is conducted in terms of anticipated state of affairs, 3) is motivated, and 4) is normatively regulated. Loomis views interaction as a special type of action.

The important characteristics of interaction include:

1. a plurality of actors
2. communication between actors by means of a set of symbols
3. a 'duration' or time dimension possessing a past, present, and future, which in part determines the character of the on-going action
4. an 'objective' whether or not its specification from the viewpoint of the actors coincides with that of an objective observer (Loomis, 1960, p. 2)

Social structure

When patterns of interaction become orderly and systematic over time, the concept social structure is used to

characterize them. Smelser states:

> 'Social structure' is a concept used to characterize recurrent and regularized interaction among two or more persons...selected aspects of interaction among persons, such as roles...and social organization, which refers to structured clusters of roles... . The important defining features of social structure are that interaction is selective, regularized, and regulated by various social controls (Smelser, 1963, p. 27).

Definitions of social systems

Parsons, Loomis, and others have developed social system models with which to analyze social structure. For Loomis:

> [t]he social system is composed of the patterned interaction of members. It is constituted of the interaction of a plurality of individual actors whose relations to each other are mutually oriented through the definition and mediation of a pattern of structured and shared symbols and expectations (Loomis, 1960, p. 4).

The social system according to Parsons:

> ...consists in a plurality of individual actors interacting with each other in a situation which has at least a physical or environmental aspect, actors who are motivated in terms of a tendency to the "optimization of gratification" and whose relations to their situations, including each other, is defined and mediated in terms of a system of culturally structured and shared symbols (Parsons, 1951, p. 5-6).

Although social systems are composed of individuals, the patterning of relationships is the most important aspect of the system. In some social systems, the patterned interaction is very distinct, highly structured and persistent; in others it is less distinct, less structured and more transient. "Any level of interaction furnishes examples of social systems:

the direct, face-to-face, personal interaction of two actors, or the indirect, enormously interlinked, impersonal interaction of a society" (Loomis, 1960, p. 4).

Much of individual human behavior including both covert and overt behavior is guided or influenced by the social systems in which the individual has participated, is participating, or would like to participate.

There is an exchange between the individual and the social systems of which he is a member. The individual "receives" from the social system certain norms and role expectations to guide his behavior and is rewarded or punished for his behavior in that social system. At the end of the action sequence(s) by the individual, and because of it, the social system may have achieved or failed to achieve the desired result. The social system then may mete out either positive or negative sanctions in accordance with the quality of performance of the individual actor. Thus, the social system "provides" guides for the individual's behavior and in turn his behavior helps or hinders the social system in reaching some desired outcome.

Social system models

Parsons' model Parsons described the social system through the use of the pattern variables which were devised in an attempt to apply the concepts of Gemeinschaft and Gesellschaft to a study of the medical profession.

He delineates four levels of pattern variable organization (Parsons, 1960a). The first level is the level of orientation and modality. Individuals have a need to relate to the object world. Parsons delineates two sets of pattern variables to describe these tendencies: specificity and diffuseness, and affectivity and affective neutrality. He also employs two sets of pattern variables to describe the significance or meaning of objects (modality) for the actor: performance-quality, and universalism-particularism.

At the second level of organization the focus leaves the individual and centers on social system processes which is for this thesis a key link between the manager's personality and the role performance required of him in the social system.

The pattern variables represented in the orientation and modality sets can be combined to represent two basic sets of functions. The instrumental-adaptive function refers to the relation between the social system and the external situation. The expressive-integrative function refers to the interrelation of action units within the system. The instrumental function leads to adaptation to the external environment; the expressive function leads to integration within the system. In terms of the framework developed by Bales (1953) task functions are similar to Parsons' instrumental function, and Bales' social-emotional function similar to Parsons' expressive function.

A blending of instrumental and expressive processes leads to effective task performance. In Bales' theory both functions are necessary. The instrumental (task) orientation is necessary for goal attainment, but the aggression produced from striving toward the goal must be drawn off by cohesive forces provided by expressive (social-emotional) processes.

Parsons views social systems as structurally differentiated about two major axes. The first dichotomized axis is designated as the external-internal axis, external referring to relations between the system and the situation external to the system; the internal referring to interrelationships of units. This distinction as noted by Parsons is similar to that employed by Homans (1950).

Loomis gives the following description of external and internal patterns. An external pattern is:

> a pattern of interaction which displays the relations necessary for the group's adjustment to its environment and for the attainment of its goals (Loomis, 1960, p. 50).

> The internal pattern is a pattern of interaction which consists of those relations that focus upon the expression of sentiments of system members toward one another (Loomis, 1960, p. 42).

The second dichotomized axis is differentiated as instrumental-consummatory. The instrumental-consummatory differentiation is analogous to the differentiation between means and ends of action. The third level of organization of the pattern variables (four functional problems) is derived

from these two axes.

> These two axes must be considered, not as continua, but as qualitatively differentiated reference categories, however much they may shade into each other. Four main functional problems or dimensions of system structure and process may be derived from these axes: (1) the external-consummatory reference which I called 'goal attainment'; (2) the external-instrumental reference which I have elsewhere called 'adaptation'; (3) the internal-consummatory reference which I have called 'integration'; and, finally, (4) the internal-instrumental reference which I have called pattern-maintenance and 'tension-management'. (Parsons, 1959b, p. 6).

All social systems have the problem of procurring and mobilizing resources. This is a problem of adaptation which concerns the external relations of the system to its environment. The social system must adapt to its situation by adjusting to demands or by actively transforming the environment. Every social system has one or more goals and attempts to attain objectives (goal attainment) through cooperative effort in the mobilization and allocation of resources. Integration includes establishing and organizing the interrelations of the member units of the system to coordinate and to unify them. The social system's motivational and cultural patterns must be maintained over time (pattern maintenance and tension management). These four functional problems are faced by and must be performed by all social systems.

At the fourth level of organization the pattern variables can be used to describe the output of the social system to the environment.

Parsons' theoretical framework has sufficient generality to be applicable to social systems at all levels from the personal interaction of two individuals to the impersonal interaction of society. As a social system, society has the same four functional problems as any other system. From a societal viewpoint, the economy is the subsystem which deals with the adaptive problem of society. Churches, schools, and kinship groups are concerned with pattern maintenance and tension management. The goal attainment subsystem of society "the polity" is centered in government, banking, and the corporate aspect of organizations. Integrative problems are the domain of courts, hospitals, political parties and legal professions.

Each of the functional subsystems of a society might be viewed as a social system with its own four basic functional problems. Parsons and Smelser have looked at the economy as a social system and view its interchanges with the other three sub-systems (Parsons and Smelser, 1956). The farmer cooperatives focused on in this thesis and the agri-business system of which they are a part may be viewed as subsystems within the economic subsystem of society.

Loomis' model Loomis uses three basic sets of concepts in the development of his analytical framework of the social system: 1) specific social system elements, 2) master processes, and 3) conditions of social action.

Loomis delineates nine elements of social systems: 1) belief (knowledge)--any proposition about the universe which is thought to be true; 2) sentiment--feeling about phenomena; 3) end, goal or objective--a change which members of a social system expect to accomplish through appropriate interaction; 4) norm--the standards which prescribe what is acceptable or unacceptable; 5) status-role--that which is to be expected from an incumbent of any social position; 6) power--capacity to control others; 7) rank-power--the value an actor has for the system in which the rank is accorded; 8) sanctions--rewards or penalties meted out by members of the system to attain conformity to its ends and norms; and 9) facility--means used by the system to attain ends (Loomis, 1960, pp. 11-30).

Loomis delineates six master processes: 1) communication--the process by which information, decisions and directives pass through the system and provide data upon which beliefs are gained and sentiments are formed or modified; 2) boundary maintenance--the process by which the social system retains its solidarity, identity and interaction patterns; 3) systemic linkage--the process whereby the elements of at least two social systems come to the articulated so that in some ways they function as a single system; 4) socialization--the process whereby social and cultural heritage is transmitted; 5) social control--the process by

which deviation is counteracted; and 6) institutionalization--the process whereby human behavior is made predictable and patterned and social systems are given the elements of structure and the processes of function (Loomis, 1960, pp. 30-36).

The three conditions of social action delineated by Loomis are: 1) territoriality--the setting of the social system in space, 2) time, and 3) size (Loomis, 1960, pp. 37-38).

Gemeinschaft and Gesellschaft value patterns[1]

For Parsons, the value pattern of a social system is the main point of reference for analyzing its structure. The value pattern "...defines the basic orientation of the system...to the situation in which it operates" (Parsons, 1956b, p. 67).

Parsons' pattern variables of value orientation resulted from an attempt at applying the Gemeinschaft-Gesellschaft dichotomy to the medical profession. A discussion of these structural types will now be presented because they can be used to relate Parsons' and Loomis' comments on social systems to formal organization theory and to the ultimate focus of this report--the manager's role in the farmer cooperative--a type of formal organization--or Gesellschaft

[1] A more complete presentation of this area may be found in the author's Masters thesis (Duncan, 1969) upon which this section is based.

social system.

As Black (1961, p. 44) has pointed out, families and friendship groups (expressive-integrative) have a pattern characterized by affectivity, diffuseness, particularism, quality, and collectivity orientation[1] (Gemeinschaft). The relationship between business firms and customers (instrumental-adaptive) stresses precisely the opposite pattern: affective neutrality, specificity, universalism, performance, and self-orientation (Gesellschaft).

Although Parsons' presentation of these relationships is perhaps the most complete, it is by no means the first. Tonnies' theory (Tonnies, 1965) contained similar concepts that resulted from his attempt to represent two widely held philosophies of his time. The Hobbesian (contract) concept of society (Fromm, 1947) was represented in the Gesellschaft and the romantic concept in the Gemeinschaft.

Tonnies These concepts of human action developed by Tonnies were based on "wills" as the orientation of action. The "will" was conceived as a voluntary choice made by the individual. In the case of "natural will" relationships are natural, instinctive characteristics of man. Entering into and maintaining social relationships can become the goal of action. "Rational will" is characteristic of social action

[1]Collectivity-self-orientation was originally part of the pattern variable set, but has since been basically dropped from Parsons' consideration.

in which the individual hopes to achieve some definite end. If action is characterized by "natural will" social relationships are Gemeinschaft; relationships based on "rational will" are Gesellschaft. The resemblance between Gemeinschaft-natural will and expressive-integrative functioning is obvious, as is the relationship between Gesellschaft-rational will and instrumental-adaptive functioning.

Loomis Loomis has also recognized this relationship between the theories of Parsons and Tonnies, and in so doing has pointed out a number of other similar theoretical orientations. Parsons utilized the typologies of Tonnies and Weber in the development of his pattern variables. Loomis has included the pattern variables along with the concepts of Tonnies, Weber and other typologists in a profile describing the characteristics of Gemeinschaft and Gesellschaft action and/or systems. The variables are arranged as follows:

Table 1. Gemeinschaft and Gesellschaft typologies

Gemeinschaft[a]	Gesellschaft[a]
particularism	universalism
affectivity	affective neutrality
functional diffuseness	functional specificity
ascription	achievement
expressive-consummatory	instrumental-adaptive
familistic	contractual
sacred	secular
traditional	rational

[a]The first five items in each column are Parsons' concepts, the first four of which are his pattern variables. The remaining three are types mentioned by Sorokin (1966), Becker (1957), and Weber (1947), respectively.

Individuals in a Gesellschaft system should have an interest in utility of objects, instrumental or task performance, adaptation to the external system, and an emphasis on cognitive as opposed to affective ways of dealing with the environment. Individuals in a Gemeinschaft system should have an interest in identification with objects, integrative or social-emotional performance, integration within the social system as opposed to adaptation to the external system, and an emphasis on affective as opposed to cognitive ways of dealing with their environment.

Various other criteria can be used in classifying and naming social systems. In this study, the major concern is with the farmer cooperative which is a special type of social system. The farmer cooperative is a special type of formal organization, which is a more general type of social system than the business firm, and the formal organization can be viewed as a special type of Gesellschaft social system.

Formal Organizations

In the preceding section two "ideal types" of social systems were discussed. The Gesellschaft with emphasis on instrumental or task performance and adaptation to the external system; and the Gemeinschaft with emphasis on integrative or social-emotional performance and integration within the social system. A <u>formal organization</u> is almost by definition <u>a type</u>

of Gesellschaft system with primary concern being focused on the external pattern and task performance, but Gemeinschaft interaction, and Gemeinschaft systems are almost always found within the formal organization. In this study, the formal organization will be viewed as a special type of Gesellschaft social system.

The basic approach of this section will be to discuss the major characteristics of formal organizations which distinguish them from other social systems.

In his discussion of personality and bureaucracy, Merton outlines some characteristics of formal organizations:

> A formal, rationally organized social structure involves clearly defined patterns of activity in which, ideally, every series of actions is functionally related to the purposes of the organization. In such an organization there is integrated a series of offices, of hierarchized statuses, in which inhere a number of obligations and privileges closely defined by limited and specific rules. Each of these offices contains an area of imputed competence and responsibility. Authority, the power of control which derives from an acknowledged status, inheres in the office and not in the particular person who performs the official role. Official action ordinarily occurs within the framework of pre-existing rules of the organization. The system of prescribed relations between the various offices involves a considerable degree of formality and clearly defined social distance between the occupants of these positions...Ready calculability of others' behavior and a stable set of mutual expectations is thus built up (Merton, 1957, p. 195).

Definition

Definitions of formal organizations usually include at least two additional concepts to those of social systems.

Formal organizations are planned or established to accomplish a certain goal(s) or purpose. In distinguishing formal organizations from other types of social organization, Blau and Scott state:

> ...there are organizations that have been deliberately established for a certain purpose... In these cases, the goals to be achieved, the rules the members of the organization are expected to follow, and the status structure that defines the relations between them (the organizational chart) have not spontaneously emerged in the course of social interaction but have been consciously designed a priori to anticipate and guide interaction and activities. Since the distinctive characteristic of these organizations is that they have been formally established for the explicit purpose of achieving certain goals, the term 'formal' organizations is used to designate them (Blau and Scott, 1962, p. 5).

As Parsons has indicated:

> [a]n organization...will be analyzed as the special type of social system organized about the primacy of interest in the attainment of a particular type of system goal. Certain of its special features will derive from goal-primacy in general and others from the primacy of the particular type of goal (Parsons, 1956a, pp. 66-67.

Goals

From the above definitions it is apparent that one of the major distinctions between formal and informal groups is that at the time of origin the formal group and its structure were created and organized to achieve specific goal(s). Three important aspects are important in this distinction: 1) the organization was deliberately established and 2) the formal structure was consciously planned 3) for the purpose

of achieving certain goals.

While attention has been called to the primacy of goal attainment in formal organizations, this does not imply that formal organizations have only one goal or that all individuals and subsystems in the formal organization have the same goal(s) as the organization.

Individuals and social systems within an organization may have different goals than the organization. Therefore, an organization may be viewed as a means of accomplishing a multiplicity of goals for the organization, individuals and social systems within the organization. It is not important that the goals of individuals and subsystems within the organization be exactly similar, but it is important for them to be functionally related (Litterer, 1963).

Rational vs. natural system model

While most authors are in some agreement on the goal emphasis and general Gesellschaft character of the formal organization, there is some difference in terms of the importance assigned to Gemeinschaft relationships, or "non-rational" factors.

Gouldner has discussed two basic approaches to organizational analysis.

> During the historical development of organizational analysis, two distinct approaches to the study of complex organizations have emerged in the work of sociologists. One of these, best exemplified by the work of

> Max Weber, is a conception of the organization in terms of a 'rational' model. The other, which can be termed the 'natural system' model, ultimately derives from Comte, was later reinforced by Robert Michels, and is now best exemplified in the work of Philip Selznick and Talcott Parsons (Gouldner, 1959, p. 404).
>
> In the rational model, the organization is conceived as an 'instrument'--that is, as a rationally conceived means to the realization of expressly announced group goals. Its structures are understood as tools deliberately established for the efficient realization of these group purposes. Organizational behavior is thus viewed as consciously and rationally administered, and changes in organizational patterns are viewed as planned devices to improve the level of efficiency. The rational model assumes that decisions are made on the basis of a rational survey of the situation, utilizing certified knowledge, with a deliberate orientation to an expressly codified legal apparatus (Gouldner, 1959, p. 404).
>
> The natural-system model regards the organization as a 'natural whole,' or system. The realization of the goals of the system as a whole is but one of the several important needs to which the organization is oriented. Its component structures are seen as emergent institutions, which can be understood only in relation to the diverse needs of the total system. The organization...strives to survive and to maintain its equilibrium...
>
> Organizational structures are viewed as spontaneously and homeostatically maintained. Changes in organizational patterns are considered as the results of cumulative, unplanned adaptive responses to threats to the equilibrium of the system as a whole (Gouldner, 1959, p. 405).

According to Gouldner, one of the most important contributions of the natural-system model is the discovery and analysis of "informal organization". However, before the informal structure of organizations is discussed, attention will first be directed to aspects of formal structure.

Formal structure

Those aspects of social structure of the formal organization which have been (or possibly might be) deliberately and consciously planned or organized will be considered formal.

An important point for this thesis is that the formal aspects of the organization provide some of the areas which the leader can control most directly. These are the aspects of organization which have been or might be consciously planned and organized.

One of the most obvious aspects of the formal structure is the division of labor among individuals and subsystems in the organization. This is usually done by a definite plan which allows for specialization of efforts of individuals and subsystems with the objective of improving the efficiency of the organization.

Informal structure

Selznick, in viewing formal organizations, places emphasis on both formal and informal relations. He views organizations as economic and adaptive structures but also as cooperative systems. "The indivisibility of control and consent makes it necessary to view formal organizations as cooperative systems..." (Selznick, 1948, p. 27). Individuals participate in organizations not only in their formal

roles but also as total personalities.

In defining organization, Simon indicates that organizations encompass a number of primary groups:

> Human organizations are systems of interdependent activity, encompassing at least several primary groups and usually characterized, at the level of consciousness of participants, by a high degree of rational direction of behavior toward ends that are objects of common acknowledgment and expectation (Simon, 1952, p. 1130).

Thus, present in every organization which has some duration are formal and informal relations among the individuals in the organization as well as formal and informal structures. Informal groups are social systems which emerge from the interaction of individuals. Although bearing on goal attainment, they are not deliberately created or organized for specific ends.

Informal groups can be viewed as social systems characterized by all the properties which are essential and necessary to any social system, but interactions between individuals are more on a personal, face-to-face basis with relationships based on the individual as a whole rather than just a formalized role. Briefly, then, relationships in informal groups within formal organizations are more direct, more frequent and more personal, i.e. more Gemeinschaft.

Blau and Scott discuss formation of informal relationships by stating:

> In every formal organization there arise informal organizations. The constituent groups of the organization, like all groups, develop their own practice, values, norms, and social relations as their members live and work together. The roots of these informal systems are embedded in the formal organization itself and nurtured by the very formality of its arrangements (Blau and Scott, 1962, pp. 5-6).

Argyris argues that incongruencies exist between organization demands and individual personalities, and that informal relationships develop as a necessary means for meeting the personal needs denied by the formal organization (Argyris, 1957).

Many other reasons are often cited for the development of informal relationships. Some of the major ones are:

> 1) the generality of the formal rules and statements, i.e., they are not specific enough to cover specific cases, 2) interests and problems of a personal nature, 3) situations arise which are not covered by the formal rules and statements, 4) the impersonality of the formal system, 5) the lag in the formal system because of its inability to 'keep up' with an everchanging environment, and, 6) influence of factors which can not be included in a formal system such as individual characteristics, unanticipated changes, individual interests and individuals are members of many other groups (Warren et al., 1967, p. 75).

Informal relations may either aid or hinder goal attainment of the formal organization. They may aid communication, improve morale, assist in the socialization of the individual to the organization, assist in social control, etc. However, they may hinder the fulfillment of certain organization goals by such activities as setting production standards other than those specified by the formal structure, setting

conflicting goals, etc.

Business Firms

The business firm is a special type of formal organization which is oriented to economic production. The farmer cooperative will be treated in this thesis as a special type of business firm. Some of the relevant characteristics of a firm are outlined by Shubin:

> The firm as a business unit consists of capital facilities and other resources devoted to a profit-making venture under unified managerial control. Comprised of one or more establishments, the firm buys labor services and various material resources in one set of markets, transforms the material through a productive process (adds value), and then sells the goods or services in another set of markets with the purpose of making a profit. The firm's business operations and productive process are characterized by interdependence of functions and division of labor. A business enterprise relies on a central controlling authority to integrate and coordinate the specialized activities and commercial transactions of the enterprise. The firm is primarily the governing agency exercising control over commercial transactions and plant establishments producing and distributing goods and services for a profit (Shubin, 1961, p. 244).

Farmer Cooperatives

Cooperatives have been viewed as "...an extension of the farm firm into nonfarm business functions..." (Larson and Rogers, 1964, p. 49). Farmer cooperatives are formed when several entrepreneurs, unable to achieve the advantages of large-scale operation on their own, form a cooperative association and still retain their economic independence.

Each farmer receives a benefit from the operations of the cooperative, often on the basis of patronage, in return for the assumption of the entrepreneurial responsibilities An attempt is made to provide goods and services at cost, discrepancies are made up at the end of the year.

The farmer cooperative as a business firm

Several students of cooperation, particularly Ivan Emelianoff (1942) and Richard Phillips (1962) have evolved a theory in which the cooperative is not viewed as a firm. One student of cooperatives, Robotka, upon whose work Phillips based many of his ideas argues that a group of entrepreneurs may incorporate, giving them the legal status of a firm, but he feels that this combination is not a firm as economically defined "...because it does not have an economic existence or pursue an economic course of action independent of that of its member firms" (Robotka, 1959, p. 6). Phillips states:

> The cooperative is really a subsidiary off-the-farm department of the farming business of each of the members. Like any subsidiary department, it is operated only to make these farming businesses more profitable (Phillips, 1962, p. 236).

Savage "...has called for a 'broader interpretation of the definition of a firm in accord with actualities' which would encompass a cooperative association as a firm..." (Helmberger and Hoos, 1962).

After an extensive review of literature, including the

arguments of Emelianoff and Phillips, Helmberger and Hoos conclude that "[i]t should be clear that the cooperative enterprise can legitimately be viewed a firm..." (Helmberger and Hoos, 1962). They go on to state that "...Emelianoff's morphology, which has led several writers astray [apparently including Phillips and Robotka] should be abandoned" (Helmberger and Hoos, 1962).

The viewpoint of Helmberger and Hoos will be accepted in this thesis, and literature relevant to the business firm will be discussed in description of the cooperative and the manager's role.

External and internal factors

Sorenson classifies firm variables as: "[o]utcomes, behavioral variables and a set of variables that specifies the internal and external conditions which face the firm" (Sorenson, 1964, p. 138). The external and internal conditions which face the firm will influence the decisions made and action taken by the firm as it acts to attain certain kinds of outcomes (results). Sorenson states:

> ...firms will act to attain certain kinds of results or outcomes. These arise when firms make decisions and take actions related to pricing, production, promotion, and organization. The behavioral variables (pricing, etc.) can be manipulated by the firm to attain sought-after ends or goals. The kinds of action taken and the results of the action will be influenced in turn by conditions internal to the firm and conditions external to the firm. The outcomes that the firm

> attains will include its rate of earnings or profit levels, cost levels, market penetration, market power, and organizational adjustment (Sorenson, 1964, pp. 138-139).

Attention will later be directed to a discussion of behavioral variables and outcomes. A brief discussion of internal and external conditions which affect most cooperatives is presented below.

External conditions The cooperative can be viewed as a sub-system of society. As discussed earlier under the presentation of Parsons' social system theory, society can be viewed as a social system in which one can distinguish sub-systems, all of which are considered social systems. In distinguishing levels of systems for the economy, Johnson states:

> The economy, it will be remembered, is conceived as one of four functional subsystems of society--specifically the subsystem that fulfills more or less adequately, the adaptive function of society. All four functions must be performed in every social system, whatever its scope and level of concreteness. We can distinguish at least six system levels: (1) the society itself, (2) a functional subsystem of society (e.g., the economy), (3) a functional sub-subsystem (e.g., the investment-capitalization system--the adaptive system of the economy), (4) a functional subsystem at the next lower level (e.g., the adaptive subsystem of the investment-capitalization subsystem, concerned with the procurement of facilities), (5) an industry (e.g., the steel industry), and (6) a particular concrete organization (e.g., a firm or a plant) (Johnson, 1960, p. 214).

The cooperative will be viewed

> ...as a system which is characterized by all the properties which are essential to any social system. Secondly, it will be treated as a functionally differentiated subsystem of a larger social system. Hence it will be the other subsystems of the larger one which constitute the situation or environment in which the organization operates (Parsons, 1956a, pp. 64-65).

The cooperative is seen as a functionally differentiated subsystem of the agri-business industry. The environment of the cooperative is made up of other systems within this industry and other systems within the society. Of particular interest in this thesis are those systems that directly impinge upon the cooperative--these systems will define the cooperative's task environment. The task environment can be divided into intra-and extra-community systems. Only those systems in the task environment of the cooperative will be discussed in this thesis, and these will be presented in the discussion of the manager's role.

Internal conditions Sorenson places the variables internal to the firm under three major headings: 1) "the firm's physical and human resources base including managerial resources," 2) "the firm's physical and administrative organization," and 3) "the goals or objectives of the firm" (Sorenson, 1964, p. 139).

In terms of the earlier discussion of social systems and formal organizations "resources" are "facilities" and organization may be interpreted as formal structure. Although

Sorenson has singled out "goals" for consideration separate from other social system elements, this seems natural since one of the key distinguishing characteristics of formal organizations is the goal emphasis.

A discussion of goals and resources will be presented in this section. Aspects of formal as well as informal structure will be presented under the discussion of the manager's role.

Goals Organizations are planned to some extent as a means for attaining certain objectives. The goal most often stated for the business firm is the production of goods and services at some profitable level. Controversy exists on whether or not the assumption of profit maximization is valid. A number of alternatives to profit maximization have been suggested.

> ...[I]t is possible that organizations do not have specific goals, but simply react and behave in response to a given situation guided only by some rough criteria for determining satisfactory behavior (Kohls, 1964, p. 12).

Simon has been critical of the assumptions of rational economic man and suggests the principle of "bounded rationality" in which the individual is seen as "satisficing" rather than "optimizing" (Simon, 1957, p. 243).

> Most human decision making, whether individual or organizational is concerned with the discovery and selection of satisfactory alternatives; only in exceptional cases is it concerned with the discovery and

> selection of optimal alternatives. To optimize requires processes several orders of magnitude more complex than those required to satisfice (March and Simon, 1958, p. 141).

Kohls has delineated a list of goals which may be relevant to businesses.

> The most usual listing of goals which may exist in some degree and may vary somewhat, or be in addition to the simplified profit maximization idea, would include the following:
>
> (1) Expand or grow in size
> (2) Maintain or enhance status or power
> (3) Control the important related parts of a business--a drive for closure of the system to secure greater independence from the market or other firms
> (4) Survive--very few managements choose to quit
> (5) Simplify or improve the management and handling of personnel in a firm--or at least not upset a satisfactory operating situation (Kohls, 1964, p. 12).

Kohls goes on to indicate that there are few empirically tested conclusions with regard to goals of the business firm.

An attempt was made to assess goals as perceived by the managers and board chairmen interviewed in the study upon which this thesis is based. Little agreement on goals was found among managers or between managers and their boards of directors. A great deal of intransitivity was found in the paired comparison technique which was employed; because of this it is difficult to draw any firm conclusions about goals as perceived by managers and board chairmen in this study. However, "...it appears that making a satisfactory net savings each year is the most important goal to both

groups (McCabe, 1966, p. 52). Thus, based on this data it will be assumed that the most important goal of most farmer cooperatives is "making a satisfactory net savings".

Facilities The size and complexity of the farmer cooperative varies from that of the large corporation upon which so much of the literature on formal organizations and business firms centers. However, most of the material presented about formal organizations applies in varying degrees to the farmer cooperative.

In discussing local marketing and farm supply businesses, Phillips states:

> The typical individual concern does an annual business of almost one-half million dollars and total sales of over a million dollars per year is not at all uncommon. In many instances the county elevator is the biggest business in the home town (Phillips, 1962, p. 4).

Although the cooperative may be classed as small or moderate in size, it may be among the largest if not the largest business in the local community. The size and complexity will vary with the nature of goods and services provided. The number of employees in cooperatives varies from two or three up to forty or fifty.

The Manager's Role in the Cooperative

A brief discussion of goals and facilities of the farmer cooperative was presented in the last section. Certain aspects of the formal and informal structure of the cooperative

will be delineated below as the manager's role is discussed.

Gross et al. (1958, p. 53) indicate that a social system can be specified by specifying the relationship between the focal position and a series of counter positions, and then specifying relationships between counter positions.

The positions within the social system are defined in terms of roles. At the general level Gross et al. define role "...as a pattern of behavior associated with a distinctive social position" (Gross et al., 1958, p. 16). They conclude that:

> ...theoretical formulations concerned with role analysis must include these three elements--social locations, behavior, and expectations...(Gross et al., 1958, p. 18).

Gross' approach to description of social systems through these three elements of role will be employed in this thesis. The focal position about which the analysis will be centered is the manager's role. Attention will first be directed toward description of the farmer cooperative by delineating positions (locations of actors within the system) and relations between positions.

Role: position[1]

The position of general manager is a location in the cooperative. Since every position, including that of manager,

[1]This section follows closely the similar presentation in the author's Masters thesis (Duncan, 1969).

is defined as a part of a system of positions, no one position has any meaning apart from its relationships with others. A complete specification of all positions and relationships would be almost impossible to deal with empirically. Thus, only the focal position (manager) and a limited number of other positions (counter positions) will be specified.

Counter positions--internal Four positions internal to the cooperative will be used to define the social system and give insights into the managerial role: manager, employees, board of directors, and patron members.

In addition to those positions in the cooperative for which relationships will be specified, relationships between the focal position (general manager) and counter positions external to the social system will be discussed. These counter positions include those of customers, suppliers, advisors, and competitors. In each of these counter positions, there will be many types and many incumbents, particularly in the case of customers.

Subordinates The first set of positional sectors[1] specifying the position of manager is the one defined by relationships to subordinates. In many cases this set consists of a positional sector formed in relation to a number of "key"

[1]A positional sector is "...specified by the relationship of a focal position to a single counter position..." (Gross et al., 1958, p. 52).

employees. The precise number of sectors in this group is a function of the business size and number of employees. Any given cooperative may or may not have an assistant manager or department heads. Yet, a manager's responsibility to his subordinates has a number of elements in common with that of other managers, including authority to hire and fire, and delegation of authority.

Normally these relationships might be defined in primarily Gesellschaft terms, for the cooperative is basically a task-oriented formal organization, and if it met the "ideal type" requirements of a formal bureaucracy, positional sectors would be characterized by primarily Gesellschaft-like relations. As Stockdale (1967) has indicated:

> The extent to which the manager and the employees of the firm tend to value Gemeinschaft rather than Gesellschaft relations or tend to lack concensus on what type of relationship is appropriate may limit the economic success of the business (Stockdale, 1967, p. 68).

But there is some question about Stockdale's assumption of the harmful effects of Gemeinschaft relations. The positional sectors can't be completely defined in terms of Gesellschaft behavior. As was indicated in discussion of the natural-system model, some attention has to be paid to the internal pattern--to problems of maintenance and integration. Sooner or later social-emotional, more Gemeinschaft, behavior has to occur, or the aggressive, more Gesellschaft relationships in the external pattern would tear the system apart.

Another factor unique to the cooperative seems to mitigate against strong Gesellschaft relations. Although the number of employees in the sample studied varied from two to sixty the average number was thirteen. In the smaller cooperatives a strong informal structure may form. In these cases the manager's problem is to improve productivity by integrating the primary group into the larger secondary structure (Katz and Kahn, 1966, p. 32). Wherever the informal structure is strong the manager might have to depend upon Gemeinschaft-based referent power more heavily than power conferred by the formal organization.[1] In the larger cooperatives the manager might have considerable Gesellschaft-based legitimate, reward, and punishment power, and might have to depend less on power associated with informal relationships.

Another factor introducing Gemeinschaft factors into positional sectors is the fact that both manager and employees are apt to be members of the same Gemeinschaft social systems outside of the cooperative. Since most cooperatives are in small rural communities manager and employees will tend to find themselves in the same neighborhood and other groups within the small community characterized by Gemeinschaft relations. It may be difficult if not impossible to divorce

[1]French and Raven (1960) delineate five types of power appropriate to the study of formal organizations: legitimate power, reward power, punishment power, referent power, and expert power.

the effect of these common group ties from the organization. The knowledgeable manager will be aware of these relationships and able to use them effectively within the formal organization, but since he too is a part of these linkages this would seemingly take certain social-emotional skills not always required in other types of organizations.

Board of directors A second set of positional sectors defining the social system and the manager's position is the set formed in relation to the board of directors who are elected by the members to handle major policy decisions. The relationship between the manager and the board has been well-delineated by Phillips (1962).

> The manager of the farmer cooperative is employed by and administratively responsible to the board of directors. The directors are elected by the membership from its own rank. Individually the directors have no particular managerial function, but sitting as a board they establish most of the basic operational policies and do most of the overall planning for the business. The manager meets with them when such planning is done and the policies are made. His council and advice on these matters is solicited by and invaluable to the board of directors. In farmer cooperatives, the responsibility for the final decision rests with the board rather than with the manager, however. Once these policies are made it is the manager's responsibility to administer them and to see that they are carried out (Phillips, 1962, p. 17).

Thus, the board has control of all major decisions within the cooperative, but much of this control is often delegated to the manager; how much control is delegated to the manager depends upon the situation which can vary from

the manager being virtually autonomous to very dependent upon the board for even minor decisions.

In most formal organizations the relationship between the manager and the board would be defined by primarily Gesellschaft relationships. But as was the case with employees, the fact of common membership in Gemeinschaft social systems[1] will invariably have an effect on this set of positional sectors.

Farmer members A third set of positional sectors consists of relationships to the farmer members of the cooperative. In terms of the formal hierarchical authority structure of the cooperative the relationships of the farmer members to the manager are not as direct as those of the other two groups. When formal authority is exerted on the manager it is brought to bear through board members or at an annual meeting. However, frequent and intimate contact both in and out of the structure of the formal organization allows the members to exert considerable influence in defining the manager's role, and requires direct social-emotional behavior directed toward customers which is not the case in many business firms.

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[1]This effect is probably strengthened by the fact that "Rural areas...being characterized by perfect competition (homogeneous production units), functional diffuseness, interrelationship of family and business, etc., have tended to be more Gemeinschaft in value orientation than urban sectors of the society" (Hobbs, 1963, p. 50).

Relationships between counter positions Although it is not of primary concern in this thesis, a few comments will be made about relationships between counter positions so that the cooperative as a social system can be better defined. In terms of the formal authority structure, relationships between employees and board members, and between members and employees are not direct. Responsibility for the employees falls on the manager, and member comments about employees are expressed through the board.

The counter position set defined by the members and board tends to be more direct than the others. The cooperative's legal structure defines the members as entrepreneurs who shoulder the basic risk-bearing and decision-making responsibilities and who select the board from among their ranks.

Counter positions--external Specification of the three groups of internal counter positions (employees, board members, and members) delimits the cooperative. However, the focal position is involved with other systems. In considering the managers of farmer cooperatives there are four groups of counter positions in social systems outside of the cooperative in the task environment which should be mentioned.

The first of these groups is customers. A distinction

between customer-members and customers and the degree of overlap should be noted. As the earlier discussion on the nature of the cooperative pointed out, the basic purpose is to increase, by extension of the farm to an additional plant, the profits accruing to that farm. If the cooperative members were economically rational they would do as much business as possible with the cooperative because they own the plant and would reap the greatest financial reward. In practice, however, members often regard their cooperative as simply another business and do not patronize it as fully as they could. On the other hand, non-members patronize the cooperative for various reasons. For purposes of this thesis customers will refer only to non-members who patronize the business. Customer-members will refer to all members regardless of their patronage habits.

A second group of extra-system positional sectors is suppliers. This group is largely made up of salesmen. Usually salesmen approaching a cooperative represent regional cooperatives as well as independent companies.

A third group of extra-system sectors is advisors. Advisors may include lawyers, management consultants, accountants, or academicians (through numerous management schools and courses).

A fourth group of positional sectors is made up of competitors. These may range from other farm supply and

marketing businesses to more general and smaller retailers.

In each of these four groups of extra-system positional sectors there will be many sectors with many types of positions and incumbents.

Role: expectations

The second definitional element of the concept role is "expectations". Role expectation was earlier defined as "... an evaluative standard applied to an incumbent of a position", (Gross et al., 1958, p. 58).

Some authors propose types of role expectations. Biddle and Thomas (1966) discuss a covert-overt dichotomy; covert expectation is defined as norms and overt expectations as demands. This dichotomy is more likely to represent the two extremes of a continuum. It is associated with what Sarbin (1954) calls intentional instructions (orally or with written forms) vs. incidental, or informal learning in acquiring role expectations.

Linton (1936) and Sarbin (1954) emphasize "rights and duties". Rights are, according to Sarbin, "role expectations in which the actor of the role anticipates certain performance from the actor of the reciprocal role" (Sarbin, 1954, p. 225). Duties are "role expectations in which the actor of a role anticipates certain performances directed

toward the actor of the reciprocal role" (Sarbin, 1954, p. 225).

For Parsons and Shils (1965), the important dichotomy is "qualities and performances". Gross, Mason, and McEachern (1958) employ a similar taxonomy of expectations: one concerns what an incumbent should be (role attribute) and the other concerns what he should do (role behavior). They also delineate two other categories of role expectations--rights and duties (mentioned by Linton and Sarbin) and role sectors. They define these concepts as follows:

> A role sector is a set of expectations applied to the relationship of a focal position to a single counter position.
>
> A right of an incumbent of a focal position is an expectation applied to the incumbent of a counter position.
>
> An obligation of an incumbent of a focal position is an expectation applied to the incumbent of a focal position.
>
> A role behavior is an actual performance of an incumbent of a position which can be referred to an expectation for an incumbent of that position.
>
> A role attribute is an actual quality of an incumbent of a position which can be referred to an expectation for an incumbent of that position.
>
> A role behavior sector is a set of actual behaviors which can be referred to a set of expectations for behaviors applicable to the relationship of a focal position to a single counter position.
>
> A role attribute sector is a set of actual attributes which can be referred to a set of expectations for attributes applicable to the relationship of a focal position to single counter position (Gross et al. 1958, p. 64).

This framework developed by Gross, et al., provides an opportunity to distinguish attributes and performance. As stated by Gross, et al.:

> This basis of role segmentation provides concepts by means of which an investigator can distinguish between what incumbents of positions should do and what incumbents of positions should be, or the characteristics they should have. A role can be segmented into expectations for behaviors and expectations for attributes (Gross, et al., 1958, p. 64).

This distinction is a central concern for this thesis, for the relationship between what a manager is (in terms of personality characteristics) and what he does (in terms of behavior within the cooperative) is a primary focus of this thesis. The expectations about what he should do to form a basis for specifying the desirable attributes (what he should be) and a means of evaluating what the manager says he does (actual behavior).

Standards can be obtained for the types of activities and the quality of these activities which are desirable for managers of farmer cooperatives.

Standards can also be obtained for the attributes or characteristics which are desirable for managers. The validity of the inference of attributes that are necessary for desirable performance can then be assessed by relating attributes to performance.

However, before this can be done a positional sector within the cooperative or a group outside the cooperative must

be selected to define the manager's role. There are six common sets of role definers within the social system and associated with it--the board, employees, members, customers, suppliers, and advisors. There will undoubtedly be conflicts between role definitions held by individuals representing these various groups.

Regardless of this conflict, a set of expectations must be specified in order to develop measures of role performance.

One approach to role expectations is from the outsider's point of view, what Newcomb (1950) calls the objective function. The objective function of a role is role expectations of an incumbent of a position as perceived by a third party who is knowledgeable about the position and the counter positions, such as a sociologist. The objective function depends upon some shared assumption on the part of group members concerning contribution made by the incumbent of the position.

In this thesis, the objective function of a particular set of role expectations defined by knowledgeables will be employed. Standards for what managers "should do" and the "characteristics they should have" will be defined by academicians.[1] A discussion of standards for role behavior

[1]For a discussion of the relative merits of this approach, see Himes (1967, pp. 38-39).

of managers is presented later in this chapter. Delineation of role attributes will be undertaken in the following chapter.

Role: behavior

The third element in the definition of role is "behavior". The major concern in this thesis is with successful role behavior.

As discussed earlier, formal organizations, of which the cooperative is a special case, are organized for the purpose of achieving certain goals. Thus, the ultimate measure of successful role performance in a formal organization is the degree to which that performance assists the organization in attaining its goals.

In Sorenson's discussion of formal organizations, presented earlier in this chapter, three firm variables were delineated--internal factors, behavior, and behavioral outcomes. One of the most important internal factors is the firm's goals. The second variable, behavior, is largely directed toward attainment of goals, and the third variable, behavioral outcomes, is an indicator of the degree to which goals have been attained. Several writers (Merton, 1957; Klubeck and Bass, 1954) have made a similar distinction at the theoretical level between behavior and behavioral outcomes. The distinction is frequently made in the economics literature between managerial input and economic output (Anderson, et al., 1956).

The distinction between behavior and behavioral outcomes will also be employed in this thesis in evaluating the efficacy of managerial role performance. Two measures of managerial success will be employed. The first measure of managerial success will be obtained by comparing actual behavior with expectations in terms of normative standards. These standards indicate what the manager should do to assist the cooperative in attaining its goals. In the following section a taxonomy of management behavior and its normative content is specified.

The second measure of managerial success to be employed is behavioral outcomes, i.e. whether or not behavior of the manager is successful in helping the cooperative attain its goals. As indicated earlier, one of the principal goals of a business firm, of which the cooperative is a special case, is to operate at a profitable level. For the cooperative, this means attaining a satisfactory net savings from year to year.

The attainment of a satisfactory net savings is a result of many factors other than the manager's role performance. He has little control over many external factors such as the competitive situation which affect cooperative profits, but he does have considerable control over internal factors. The manager has authority over the employees of the cooperative--the labor input, and many of the entrepreneurial functions of

the cooperative are often delegated to the manager. Major decision-making that is not delegated to the manager is still frequently influenced by him in terms of his advisory role to the board and members. The degree and scope of the manager's influence within the cooperative seems to be sufficient justification for the employment of economic success of the cooperative as an index of the quality of his role performance. The indices of economic success that are used in this thesis will be discussed in the Methods chapter.

Management: a role definition

The role defining element of "position" was delineated when the manager's role was relationally specified. The element concerning actual behavior will be more thoroughly discussed in the methodology chapter. In this section, the concepts dealing with expectations will be given content.

Levels According to Parsons, all formal organizations exhibit three major hierarchical activity levels (Parsons, 1956a, 1956b, 1960b). The first organizational level is the technical level. At this level, the actual "product" of the organization is manufactured or dispensed. Parsons distinguishes four categories of technical level output:

> (1) Physical production in economic sense, i.e., of commodities; (2) administrative implementation of authoritative decisions; (3) integration of units in social systems; and (4) maintenance or creative modification of motivation or cultural components of the social systems (properties of units) (Parsons, 1959b, p. 11).

Above the technical level is the managerial level of organization. There are three primary foci of this operation:

> The first concerns the mediation of relations to the recipients of the output of the technical organization--i.e., generally the decisions of what and how much to 'produce' and on what terms, financial and otherwise, it shall be made available to recipients... The second focus is that of the 'procurement' of facilities necessary for performing the function--e.g., materials, equipment, and personnel... Finally, the third focus is that of control and supervision of the technical or primary units of organization...(Parsons, 1959b, pp. 11-12).

The third level, the institutional, connects the organization with the wider social system. The members of fiduciary boards (directors or trustees) have supervisory responsibilities and supportive functions with respect to the managerial level. They oversee the operations of the organization and define broad limits of what the management may legitimately do (Parsons, 1959b, p. 14).

Phillips has indicated that at least two levels of management can be delineated within the cooperative; overall and operational. "Overall" management is comparable to Parsons' (1959b) "institutional" level. In the cooperative this function is performed by a board of directors elected from the members. Phillips (1962) describes the functions of overall planning and organizing as including:

> ...(1) the basic organizational structure of the business and its relationship to its owners, (2) the financial structure for the business, (3) setting up the merchandising operation, and (4) planning plant and facilities for an efficient and low cost operation (Phillips, 1962, p. 211).

Phillips (1962, p. 211) indicates that within these limits set by overall management, the manager, at the operational level, must make the business as profitable as possible. As indicated earlier (March and Simon, 1958, p. 141; McCabe, 1966, p. 52) the objective for the manager's performance at this level might be more accurately stated in terms of profit satisficing.

Thus, at the second level of management--the operational--the manager of a cooperative attempts to attain a satisfactory level of profit, operating within a set of "givens" including plant and other large assets, the financial structure, labor resources, basic operating policies, and the market situation. However, over a longer period of time the general manager can influence some of these elements.

> For example, he normally has authority to vary the level of some inputs, such as changing the composition of current assets and the quality of labor. He can modify the financial structure by altering the composition of the current liability accounts (Baumel and Fuller, 1964, p. 858).

In his role as advisor to overall management, the manager can also influence basic policies of the business.

Thus, "the level of output and profit of the business is definitely a function of the practices of the general manager" (Himes, 1967, p. 43). Given this assumption, the efficacy of management performance can be assessed by comparing it with certain normative standards or indirectly by measuring outcomes of performance through measures of

profitability.

Katz and Kahn (1966) have developed concepts to describe types of leadership behavior at various organizational levels. Their first level ("top echelons") seems to be similar to Parsons' institutional level and Phillips' overall management. Their other two levels and accompanying leadership processes seem to involve different levels of operational management. Their three types of leadership behavior to be found in organizational settings are as follows:

1. the introduction of structural change, or policy formulation
2. the interpolation of structure, i.e. piecing out the incompleteness of existing formal structure, or improvisation, and
3. the use of structure formally provided to keep the organization in motion and in effective operation, or administration.

In the cooperative situation the manager would typically be operating at the lower two levels, but acting in his capacity as advisor to the board of directors he should also have ample opportunity to influence decisions at the top level.

Katz and Kahn also delineate the appropriate cognitive and affective "abilities and skills" necessary at each level. These relationships are shown in the following table:

Table 2. Abilities, skills, and leadership level

Type of Leadership Process	Appropriate Organizational Level	Abilities and skills	
		Cognitive	Affective
Origination: change creation and elimination of structure	Top echelons	System perspective	Charisma
Interpolation: supplementing and piecing out of structure	Intermediate levels: pivotal roles	Subsystem perspective: two-way orientation	Integration of primary and secondary relations: human relations skills
Administration: use of existing structure	Lower levels	Technical knowledge and understanding of system of rules	Concern with equity in use of rewards and sanctions

As Katz and Kahn point out, their

> ...attempt to show some of the differences between the cognitive orientation and the affective style of the leader is congruent with the experimental findings that the two basic dimensions of the leader-follower relationship are task-direction and socio-emotional supportiveness (Katz and Kahn, 1966, p. 311).

These are the same two basic dimensions found in the writings of Parsons and Bales in their discussions of small groups and social systems.

Task-direction and socio-emotional supportiveness A number of theorists have developed typologies of leadership behavior which can be related to the concepts of task and socio-emotional performance.

Zaleznik (1964) has related task-idea object cathexes to his proactive function (indicating change in the environment) and interpersonal-people cathexes to the homeostatic function (maintenance of the organization). Zaleznik's homeostatic function is most likely performed by a person-oriented individual interested in a group maintenance (social-emotional) role. This is the maternal-social specialist in Parsons' framework. The proactive function is most likely performed by an idea-oriented individual interested in a task role. This is the paternal-task specialist in Parsons' framework. Zaleznik has theorized that the individual who combines these two orientations is most likely to attend to mediative functions in which he is concerned with "... internal change in response to environmental press" (Zaleznik, 1964, p. 157).

Cartwright and Zander (1960) delineate two functions: group maintenance; and goal achievement which includes initiating, planning, evaluating, providing information, etc.

Mann (1962) has presented a theory of three skills: human relations skills; administrative skills--a combination of task and social-emotional skills involving planning, organizing, coordinating, etc.; and technical skills--use of knowledge and abilities for the performance of specific tasks.

Likert (1961) has delineated five factors: supportive relationships; group methods of supervision; high performance goals, including coordinating, scheduling, and planning; and

technical knowledge--the possession or providing for resources and knowledge.

Bowers and Seashore (1967) after presenting the above and other taxonomies present a summary one of their own. They perceive four basic leadership concepts; support--the enhancement of other's feelings of self worth; interaction facilitation--encouragement of close relationships; goal emphasis--stimulation of enthusiasm for goals and performance; and work facilitation--helping to achieve goal attainment through scheduling, coordinating, planning, providing resources and knowledge, etc.

These relationships and others are presented in the following summary table.[1] Social-emotional performance concepts are presented in the top row followed by mixtures of task and social-emotional performance in the following rows, down to the bottom row which includes basically task-oriented concepts.

Task functions Due to limitations in the scope of the data gathered in the project upon which this thesis is based, the aspects of managerial performance to be focused on in this thesis are largely task-oriented in nature. Of the concepts presented in the preceding discussion, they probably

[1]Adapted from Bowers' and Seashore's "Table 1" (Bowers and Seashore, 1967, p. 248).

Table 3. Comparison of leadership concepts

Zaleznik (1964)	Barnard (1958)	Bowers & Seashore (1967)	Halpin & Winer (1957)	Mann (1962)	Cartwright & Zander (1960)
Homeostatic	Interpersonal	Support	Consideration	Human relations skills	Group maintenance functions
		Interaction facilitation	Sensitivity		
Mediative	Technical	Goal emphasis	Production emphasis	Administrative skills	Goal achievement functions
Proactive		Work facilitation	Initiating structure	Technical skills	

<table>
<tr><th>Hemphill & Coons (1957)</th><th>Katz, et al (1950)</th><th>Katz & Kahn (1951)</th><th>Kahn (1958)</th><th>Likert (1961)</th></tr>
<tr><td rowspan="2">Maintenance of membership character</td><td rowspan="2">Employee orientation</td><td>Employee orientation</td><td rowspan="2">Providing direct need satisfaction</td><td rowspan="2">Principle of supportive relationships</td></tr>
<tr><td>Closeness of supervision</td></tr>
<tr><td>Group interaction facilitation behavior</td><td></td><td rowspan="2">Group relationships</td><td></td><td>Group methods of supervision</td></tr>
<tr><td rowspan="4">Objective attainment behavior</td><td rowspan="4">Production orientation</td><td rowspan="2">Structuring path to goal attainment</td><td rowspan="3">High performance goals</td></tr>
<tr><td rowspan="2">Modifying employee goals</td></tr>
<tr><td>Differentiation of supervisory role</td><td rowspan="2">Enabling goal attainment</td><td rowspan="2">Technical knowledge planning scheduling</td></tr>
<tr><td>Closeness of supervision</td></tr>
</table>

correspond most closely to Mann's administrative skills that are basically task oriented but contain varying degrees of social-emotional elements.

The selection of performance areas to be investigated was based on guidelines set forth in the management process school of management theory (Koontz, 1962). The approach of this school is to analyze management performance in terms of basic functions.

General functions Although there is some disagreement among management-process theorists, a pattern of basic management functions has tended to appear in the literature. Allen (1964) defined management functions as a group of related kinds of management work, made up of activities which are closely related to one another and which have characteristics in common derived from the essential nature of the work to be done. Each function can be defined so as to separate it logically from other functions. He classified the functions of management into the following four categories--planning, organizing, leading, and controlling.

Koontz and O'Donnell (1959) delineated five functions--planning, organizing, staffing, directing, and controlling. Jucius and Schlender (1965) delineated four functions--planning, organizing, directing, and controlling. In another discussion of the functions of management Abshier and Dahle (1960) indicate five basic functions--planning, organizing, directing,

coordinating, and controlling. Phillips (1962) delineated the same five management functions. Phillips' classification was used as a guideline in the selection of measures to assess management performance in this study.

Phillips (1962) offered the following description of the five functions of management. "Planning basically is the decision-making function of management" and it involves

> ...looking ahead and appraising in anticipation of the decision... Organizing means grouping processes, assets and personnel, and establishing relationships among them... Directing may be thought of as the leadership or coaching function... Coordinating means keeping all phases of the business in step, seeing that each phase supports the others in a unified effort... Controlling is the supervisory function of management to assure satisfactory performance in all phases of operations (Robotka, 1959, pp. 9-10).

Operational areas The functions of management are performed at all levels within a business, including the operational level. However, at the operational level, there are also certain task areas of managerial responsibility that can be delineated. Phillips (1962) develops seven areas of expected competency for managers of agricultural retail business which includes: 1) employee management, 2) customer relations management, 3) retail management, 4) wholesale management, 5) inventory management, 6) custom service management, and 7) retail credit management.

Measures were developed to assess managerial performance in these operational areas and in the general functions. The

techniques employed in their development are discussed in the Methods chapter.

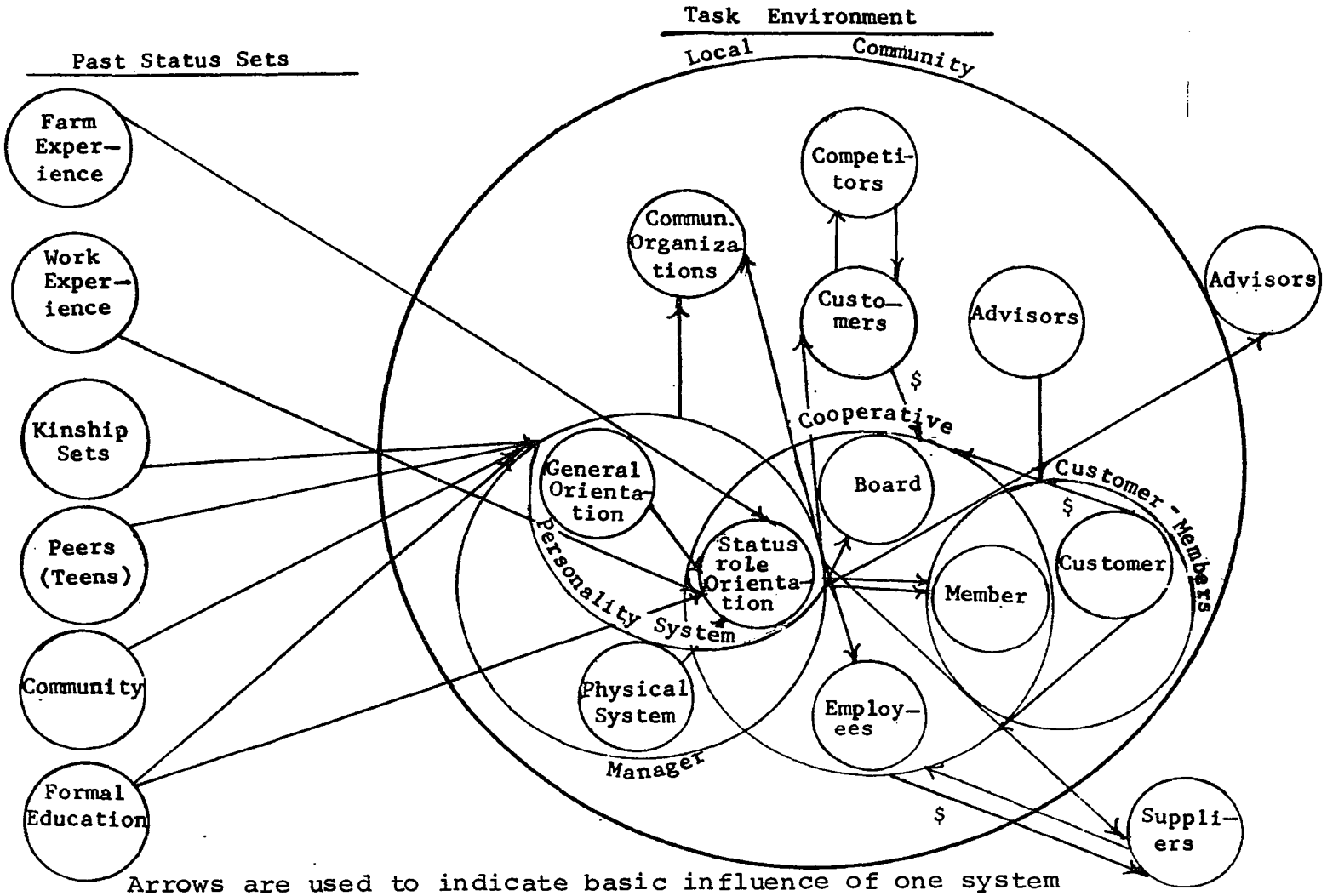
Conceptual Model

Before the development of hypotheses is begun, the preceding sections will be summarized in the form of an expanded general conceptual model that will serve as a guide for hypothesis development. This model is presented in Figure 4.

Two basic units of analysis have been discussed in this chapter--the individual and the social system. The individual of primary concern in this thesis is the farmer cooperative manager; the social system to be focused on is the farmer cooperative.

Selected social systems that were part of an individual's past status sets are presented on the left side of the model. For any given individual a number of separate social systems might be included in each category, so experience categories have been employed in the model rather than specific social systems. Most of the relevant socializing systems that contribute to a manager's general and status-role orientations are indicated in the model. However, in further discussion only formal education and work experience will be attended to.

The concept of current status sets has been omitted from this presentation of the model. Norms and role expectations



Arrows are used to indicate basic influence of one system upon another

Figure 4. Expanded general conceptual model

from social systems other than the cooperative in a manager's status set affect his performance of his managerial role, but no attempt was made to assess the effects of these factors in the study upon which this thesis is based.

Discussion of the manager's personality system will be divided into a general orientation that affects his behavior in all social systems in which he participates, and his status-role orientation in the farmer cooperative. No consideration will be given to other status-role orientations that make up the manager's personality. Both general and status-role orientations are conceived as being comprised of motivational, cognitive and value orientations.

The manager in his role is part of the task environment which is comprised of the focal social system (the cooperative--which includes the manager as incumbent of one of the status-roles), and the organization set (the other systems with which the focal system interacts). The subsystems of the cooperative are indicated in the model as well as some of the more salient systems in the organization set.

Of particular concern in this thesis are the performances of the manager vis a vis the other systems in the task environment, and the balance between dollar outflow to suppliers and dollar inflow from customers that is partially a result of this performance.

The components of this model will be discussed in greater detail in the following chapter.

CHAPTER THREE: DERIVATION OF HYPOTHESES

Introduction

All theoretical hypotheses to be tested in this study will be derived in this chapter. The method to be used in generating the hypotheses will be essentially the method outlined by Zetterberg in his discussion of moving from theoretical propositions to ordinary propositions (Zetterberg, 1965, pp. 79-82). Specific propositions will be extracted from more general propositions by reduction of key terms. The propositions to be tested that have the highest informative value will be called general hypotheses.

> In general, the larger the number of different ways in which a proposition can conceivably be proved incorrect, the higher its informative value. Put differently, the higher the informative value of a proposition, the greater is the variety of events for which it can account (Zetterberg, 1965, p. 79).

In most cases these general hypotheses will be explicated into sub-general hypotheses, and some sub-general hypotheses will be explicated further to specific hypotheses.

Concepts in these theoretical hypotheses will be operationalized in the next chapter and then the empirical hypotheses will be stated. In Zetterberg's terms, these empirical hypotheses have the lowest informative value. However, if the procedure has been followed correctly, they will be special cases of the general hypotheses.

No attempt will be made to present a comprehensive

investigation of the theories relevant to management success, but rather, segments of them will be drawn upon to develop selected hypotheses judged relevant to this study. The derivation of hypotheses will follow the same outline as the development of the preceding chapter on theoretical orientation. A few important factors in a manager's socialization will be discussed, followed by a normative description of a manager's personality system with attention directed first at general orientation and next at status-role orientation. After a brief discussion of extra-system performance attention will be focused on social system factors, first the focal social system, the cooperative, and then on the organization set. Hypotheses will be developed first in which the above factors are related to the first measure of managerial success, role performance.

A very brief discussion will then be presented of those factors that are expected to relate to the second measure of managerial success--economic success of a cooperative. Theoretical hypotheses relating these factors to economic success will then be presented in tabular format.

Socialization

The discussion of socialization in the previous chapter focused on the early development of general personality characteristics. The concept socialization is usually used

to refer to the process by which the general culture of a society is instilled in individuals, largely by family, and school (DeFleur et al., 1971). However, socialization may be used to define the process by which the culture of any group is instilled in individuals.

Individuals must constantly learn new roles; socialization is a continuous process. Socialization will be defined in this thesis as the "...process whereby an individual qualifies to participate in the activity of a group by learning norms and roles" (Caplow, 1971, p. 23). This also implies learning attitudes and values appropriate to one's role in a group. A few selected factors in a manager's socialization that should lead to his developing values, norms, and attitudes appropriate to his role will be discussed. A review of management literature indicated three experiential factors that have frequently been found to relate to managerial success: education, favorable life experiences, and job experience.

Education

Formal education and training programs which provide a manager with a better understanding of his role have long been found to be important factors relating to managerial performance. England (1961) indicates that education is consistently among the best predictors of job success. Most descriptions of successful executives indicate that they are

well-educated (Nation's Business, 1960). Executives who are more frequently promoted tend to have a higher level of scholastic achievement in number of years than those who are not promoted (McClaine, 1968). Wald and Doty (1954, 1960) indicate that successful executives not only have above-average education, but also take continued advantage of educational opportunities.

Although the above review is not of research that has been done in the agricultural sphere, the research settings were quite diverse. Because of the number of studies that have found a relationship between a manager's education and his performance, a similar relationship might be found in farmer cooperatives.

There are probably three basic factors involved in this relationship between education and performance. Part of the relationship may be spurious, i.e. caused by a third factor--intelligence. There is a strong correlation between intelligence and education. People with more intelligence tend to go on for more education (Berelson and Steiner, 1964). However, this may not be entirely one way causality, for much of what is normally construed as intelligence is a result of education.

Perhaps the most obvious factor in the relationship between education and performance is the knowledge resulting from the educational process which enables an actor to perform his role. It is assumed that the more knowledge a

manager has about his role, the more efficiently he will perform it.

A third factor in the relationship between education and performance is symbolic skills that a manager develops through years of education. These skills enable him to deal effectively with abstractions, to plan, to conceptualize. These same skills enable him to understand and communicate with others in his role relationships.

On the basis of the above discussion it is hypothesized that a manager's education and performance are positively related.

General hypothesis 1:

There is a positive relationship between a manager's education and his role performance.

Favorable life experiences

As has been the case with other aspects of socialization, most of the attention to the favorableness of life experiences has been focused on childhood. The effect on the personality of lack of favorable experiences in childhood is vividly depicted by Berelson and Steiner in the following paragraph.

> The less the affection, satisfaction of dependence, or warmth the infant and child receives (in other words, the more the reserve, neglect, or rejection), (1) the less developed is his subsequent personality likely to be and the less quickly he matures (in childhood)--i.e., the more he is apathetic, unresponsive, "vegetative," and incapable of independent action; and

> (2) the less strength of character and sense of self he is likely to have, leading even to the development of a psychopathic personality that feels no responsibility to others (Berelson and Steiner, 1964, p. 75).

Some research has been done relating favorable childhood experiences to supervisor and executive performance. A happy childhood in a stable middle-class family has been found to be related to the success of executives (Nation's Business, 1960). Another study found a happy home life to be related to executive success (Wald and Doty, 1954). Shearer (1957) found that successful supervisors had received little discipline as children, and perceived that they had been either their parents' favorite child, or at least not treated badly.

These positive life experiences lead to the development of a positive self image and self-confidence that would allow a manager to more effectively perform his role.

A preponderance of negative life experiences would have a tendency to lead to a personality characterized by apathy and a lack of feeling of responsibility to others (as Berelson and Steiner indicate).

General hypothesis 2:

There is a positive relationship between a manager's favorable life experiences and his role performance.

Job-related socialization

Jennings (1959) indicates that there are two basic schools of thought about the nature of executive talent. One is a skill-insight theory which postulates "...that there are identifiable traits of executive success and that people with these traits can be turned into good executives with a few weeks or months of training" (Guion, 1965, p. 457). The other approach is the life-process theory which argues that the successful executive is the result of years of development. In this thesis aspects of both theories are subscribed to. The life-process theory has received considerable support. England (1961) in a review of literature indicates that length of work experience is one of the best predictors of job success.

Past relevant experience should provide the manager with knowledge that is relevant to his role. This type of knowledge may be assumed to increase the manager's management effectiveness in his role.

The only job-related socialization factor to be investigated in this thesis is management experience. It is assumed that the more experience the cooperative manager has had in management the more he will be able to make intelligent decisions and to solve management problems.

One aspect of total management experience in this study is that of the manager's familiarity with the business he

currently manages. It is assumed that the longer the manager stays in a business the more familiar he will become with it, therefore, he should be able to handle its management problems more effectively. Thus, on the basis of the above rationale a manager's management experience is expected to be positively related to his management performance.

General hypothesis 3:

There is a positive relationship between a manager's management experience and his role performance.

Personality System--General Orientation

In the preceding chapter, the personality system was presented as having two basic components--a general orientation and status-role orientations--each composed of motivational, cognitive, and value orientations. The discussion of personality system in this chapter will be primarily focused on the manager's status-role orientation, but some discussion will be directed to motivational aspects of general personality orientation.

Two aspects of motivational orientation were focused on in the preceding discussion--goals and behavioral predispositions. No discussion of general goals will be presented in this chapter, but two aspects of general behavioral predispositions, interpersonal traits and self-confidence, will

be attended to.

Interpersonal traits

Based on the discussion in the previous chapter, interpersonal traits defined in terms of task and social-emotional orientation would be expected to relate to behavior in a management setting. Research indicating this relationship is discussed below.

General hypothesis 4:

There is a relationship between a manager's interpersonal traits and his role performance.

Dominance Attention will first be focused on the interpersonal trait of power, presented earlier. Leary (1957) indicated that those individuals characterized by adjustment through power express strength, force, energy, and leadership. Leary's "managerial personality" is characterized by the interpersonal response trait of power or dominance. Thus, although not the exact equivalent, dominance can be conceived as the interpersonal trait measure of leadership in Leary's system.

This relationship of dominance to leadership has been noted by a number of authors. Secord and Backman (1964) write that leaders are generally high in such traits as ascendance and dominance. Guetzkow (1960), Hunter and Jordan

(1939), Richardson and Hanawalt (1943), and many others have perceived leaders as generally high in dominance as opposed to followers who have strong dependency needs which they may or may not admit to.

Dominance has also frequently been shown to be one of the few general personality traits to be related to managerial and executive success (Mann, 1959; Rawls and Rawls, 1968; Goodstein and Schrader, 1963; Huttner et al., 1959; Miles, 1968).

Given the above data one might assume that the more dominance in the leader's personality the better, but Leary (1957) warns that there may be some negative consequences for the social system if the leader is highly dominant. If the trait of dominance is too strong, the leader will seek docile, admiring followers. He will also tend to attribute too much weakness to others, and fail to perceive strength in them.

Thus, within a given range there should be a positive relationship between dominance and effective managerial performance. Assuming that most cooperative managers would fall within this relevant range of dominance, the following hypothesis can be stated:

Sub-general hypothesis 4.1:[1]

There is a positive relationship between a manager's interpersonal trait of dominance and his role performance.

Achievement Achievement can be viewed as a combination of the interpersonal traits of dominance and aggression. These two traits in Parsons' framework (Parsons, 1951) are perhaps the most necessary for ultimate goal attainment in the social system. Power and aggression correspond to "adaptation" in his scheme which he points out is necessary but may or may not be sufficient for goal attainment.

In Leary's interpersonal theory the competitive or achievement-oriented personality falls between the aggressive and managerial personalities. In social system terms this would relate it to task leadership. The relationship between achievement and task performance has been well-documented in the literature. Most of the work has been done relating achievement to grade point average (Gough, 1957). But at least a few studies have found achievement to be related to other types of task performance such as measures of efficiency, task performance in small groups, and others (Gough, 1957). Achievement has also been found related to managerial success (Merrill and Heathers, 1956).

[1]This method of designating hypotheses will be followed throughout this thesis. The first number refers to the general hypothesis, the second number refers to the sub-general hypothesis. This same format will be followed later for delineating specific and empirical hypotheses.

Sub-general hypothesis 4.2:

There is a positive relationship between a manager's interpersonal trait of achievement and his role performance.

Self-concept

The only general attitude to be investigated in this study is the attitude a manager holds toward himself, his self-concept. As Mead indicated, an individual

> ...enters his own experience as a self...only in so far as he first becomes an object to himself just as others are objects to him or in his experience (Mead, 1934, p. 138).

The focus in this section is on general self-concept which is at least partially independent of roles.

As indicated earlier, one of the basic motivating forces of individuals is the enhancement of self-esteem. Self-esteem was defined as the ratio of success to pretensions which may be enhanced by an extension of striving or a withdrawal of self-expectation (James, 1948). Shlien (1962) indicates that the latter course may be more common among individuals with low self-concepts. As Krech et al. point out "...the chronically failing man will progressively reduce his level [of achievement] in order to defend himself against further failures" (Krech, et al., 1962, p. 81). What is necessary to set off this defense in individuals is a negative self-concept, not necessarily an objective appraisal of his performance by others.

Persons with negative self-concepts spend considerable time and energy building and utilizing defense mechanisms to protect their self-concepts. This severely limits the range of their behavior. As Shlien (1962) indicates, behavior is a consequence of perception; if perception is narrowed and rigidified by threat, the efficacy of behavior is reduced. Thus, in general, the more negative an individual's self-concept, the more restricted will be his behavior.

Self-acceptance is also frequently related to acceptance of others (Berger, 1952). Individuals with poor self-concepts tend to get along poorly with others and have disruptive effects on social systems in which they participate.

The aspect of self-concept that seems to have been most frequently employed in managerial and executive selection is self-confidence. England (1961) has indicated that self-confidence has been one of the best predictors of success at any kind of job. Self-confidence has been found to be positively related to executive success (Rawls and Rawls, 1968; McClaine, 1968). Guion and Gottier (1965), after an extensive review of literature on selection of managerial personnel concluded that self-confidence is one of the most important factors to consider in the selection of managers.

General hypothesis 5:

There is a positive relationship between a manager's self-confidence and his role performance.

Personality System--Manager's Status-role Orientation

The status-role orientation of interest in this thesis is that of manager of a farmer cooperative. Other status-role orientations such as the manager's orientations in his roles as husband and father probably affect his role as manager, but they will not be considered.

A manager's orientation in his status-role of manager is composed of motivational, cognitive, and value orientations which he holds as incumbent of a particular status-role (manager) in a specific social system (the cooperative). Aspects of all three of the above orientations will be discussed. Under the discussion of motivational orientation, attention will be directed to the goals that the manager is trying to achieve, his attitudes toward system objects, and his attitudes toward objects in the task environment. The only cognitive orientations to be discussed will be knowledge factors. This section will be concluded with a discussion of value orientation, the third aspect of status-role orientation.

Motivational orientation

A manager's motivational orientation with respect to his status-role in the cooperative will be defined as the set of goals and behavioral predispositions that influence his role

behavior. Components of this orientation that are expected to influence the quality of his role performance are goals and attitudes toward system and extra-system objects.

General hypothesis 6:

There is a relationship between a manager's motivational orientation in his managerial role and his role performance.

Goals The primary goal of managers is usually seen as maximization of profits of the businesses they manage. In this study, as earlier indicated, the most frequently mentioned goal was to attain a satisfactory net savings. Often, as was the case with nearly all of the managers participating in this study, the manager is not immediately rewarded for attaining satisfactory levels of profit. The cooperative manager is salaried and, though certain bonus plans tie a small percentage of his salary to profits, most substantial increases come from a decision of the board of directors as a reward for performance. In many cases a salary review comes annually. Thus, it is assumed that in most cases the manager is quite directly rewarded for his ability to increase profits of the cooperative. Thus, profit maximization will be an important goal for many cooperative managers.

Although the probable relationship between the goal of profit maximization and business profits is clear and will

later be hypothesized, it is not so obvious that having a goal of profit maximization should be related to effective managerial performance. It will be argued in this thesis that most managers who desire to achieve maximum profits for their business will perceive that the quality of their own performance is an important factor in the attainment of this goal and will take steps to improve it. Some support has been given to this assumption by research that indicates a positive relationship between economic interests and industriousness (Baldwin, 1961).

Sub-general hypothesis 6.1:

There is a positive relationship between a manager's orientation toward profit maximization and his role performance.

Attitudes toward system objects A number of relationships between a manager's attitudes toward system objects and his role performance will be hypothesized. Since most researchers have included the idea of a predisposition to behave in their definitions of attitude, a relationship between attitude and behavior is frequently hypothesized. However,

> ...anyone making a survey of the correlation of verbal attitude measurement with behavior will arrive at the dis-heartening conclusion that these correlations are in most cases considerably lower than we desire (Himmelstrand, 1960, p. 225).

Whether or not any given predisposition to behave is actually manifested in behavior is a function of other internal stimuli as well as external stimuli impinging upon the actor. Whether or not a manager's predisposition to respond to certain objects is related to his overall role performance is a question that will be investigated in this thesis. Even if an attitude of a manager is manifested in behavior, that behavior would only be one aspect of his over-all general functions and operational areas performance. Because of the above considerations, no direct relationship between a manager's attitudes and his over-all role performance is assumed. All statements of this relationship will be classified as verifiable hypotheses.

Social objects There are four categories of social objects within the cooperative to which a manager must orient himself: the board, employees, members, and his self. The relationship between a manager's attitude toward two of these objects (self and employees) and his role performance will be investigated in this thesis.

Sub-general hypothesis 6.2:

There is a relationship between a manager's attitude toward social objects within the cooperative and his role performance.

Attitude toward self as manager As indicated earlier, James has argued that a man has as many social selves as he has roles to play. Thus, an individual has an attitude toward himself in each role that he plays. Attention was directed earlier to a manager's general self-concept and self-confidence; attention will be focused in this section on the attitude a manager holds toward himself in his role as manager.

People tend to perform congruently with their perceptions of themselves (Shlien, 1962). If a manager perceives himself as a poor manager he will tend not to perform well even if he is capable of doing so.

As indicated earlier, individuals who have negative self-concepts tend to withdraw their expectations of themselves (James, 1948), and reduce their level of achievement to defend against further failures (Krech et al., 1962). The time and energy individuals with poor self-concepts devote to building defense mechanisms limits the range of their behavior. Behavioral efficacy is further reduced by perceptions that are narrowed and rigidified by threat.

As indicated earlier, there tends to be a positive relationship between attitude toward self and attitude toward others. If a manager has a negative attitude toward himself in his role, he is apt to have a negative attitude toward other members of the cooperative which could be manifested

in behavior.

Sullivan indicates that if the self dynamism is essentially derogatory, it will facilitate hostile, disparaging appraisals of other people (Sullivan, 1947). If this were the case, poor morale, low productivity, and employee turnover could result. The manager's role performance would then tend to suffer, because his performance is at least partially contingent upon the support of other members of the cooperative.

A positive relationship between attitude toward self in one's role and effectiveness has been found by a number of researchers (Mussen and Lyman, 1959; Shearer, 1957). It has also been found in a study of cooperative managers (Buel, 1966).

Specific hypothesis 6.2.1:

There is a positive relationship between a manager's attitude toward himself as manager and his role performance.

Attitude toward employees The second attitude toward a social object within the cooperative to be investigated is the manager's attitude toward his employees. As discussed earlier, a manager needs the support of other individuals in the cooperative if he is to perform his job well. If he has a negative attitude toward employees and displays this in his behavior he is apt to alienate his

employees and either lose or never gain their support.

Having a positive attitude toward other individuals in a social system leads to integration and maintenance of the system (Bales, 1953). Enhancing the feelings of worth and importance of subordinates has frequently been described as a basic dimension of leadership (Bowers and Seashore, 1967). Likert (1961) has pointed out that employee-centered supervisors tend to be more effective than production-centered supervisors who pay less attention to their employees. Another study of supervisors' attitudes toward people (Mandell, 1949), indicated that supervisors with positive but not overly-optimistic attitudes about employees' capabilities tended to be most successful.

Bellows (1961) in his discussion of successful personnel management, indicates that one of the most important factors is confidence in subordinates. The manager who performs tasks that he should be assigning to subordinates limits the efficiency of his business.

Specific hypothesis 6.2.2:

There is a positive relationship between a manager's attitude toward his employees and his role performance.

Cultural objects--managerial role Parsons (1951) indicates that there are three basic classes of objects to which an individual can orient himself--social, cultural, and

physical objects. Attention was directed in the previous section to important social objects within the cooperative. The only cultural object that will be considered in this thesis is the managerial role. Warren (1965) indicates that attitude toward management has previously been found to be related to measures of management performance.

As discussed earlier, attitudes have cognitive and affective aspects as well as behavioral. In investigating manager's attitudes toward the managerial role, three aspects, two that are basically cognitive and one affective will be focused on. The two basically cognitive factors are perception of power associated with the managerial role, and the perceived importance of new management information. The affective factor is job satisfaction. The first two of these aspects refer to the managerial role in general, the third refers to a manager's particular role within a specific social system.

There has been considerable study of relationships between job satisfaction and performance (Vroom, 1964). However, there has been little research on the other aspects of attitude toward the managerial role, but enough research has been done in this area, as indicated in the following paragraphs, to justify hypothesizing a positive relationship between attitude toward managerial role and role performance.

Sub-general hypothesis 6.3:

There is a positive relationship between a manager's attitude toward his role and his role performance.

General attitude An important aspect of a manager's attitude toward the managerial role is his perceptions of the factors involved in not just his particular role, but the managerial role in general. Two of these perceptions to be discussed below are power and the importance of new management information.

Power As indicated several times in the preceding chapter, individuals tend to behave on the basis of their perceptions of the situation. A manager who perceives little power associated with the managerial role may tend to perform poorly when he does not exercise authority invested in his role or influence that he has attained because he doesn't perceive managers as possessing these aspects of power.

Research has frequently indicated that individuals who are in a position of control and responsibility are more ego-involved. If individuals have little power, they tend to be more apathetic and disinvolved (Tannenbaum, 1962). If one accepts the thesis that what governs an individual's behavior is his perception of reality and not reality itself, one could argue on the basis of the above finding that individuals who perceive themselves and others as possessing little power

in a role will perform it poorly.

Specific hypothesis 6.3.1:

There is a positive relationship between the amount of power a manager sees associated with the managerial role and his role performance.

Importance of new management information

Managers who perceive a great deal of power associated with their roles and who become ego-involved in their roles may show considerable interest in acquiring new management information so they might better perform their roles. Warren (1965) indicates that if managers have favorable attitudes toward new techniques and practices, they will be more likely to improve their ability in their areas of responsibility in management of the business.

The following hypothesis is presented for exploratory purposes with some apprehension, for if stress is placed on quantity rather than quality of new management information, the ultimate effect on management performance may be nil or even negative.

Specific hypothesis 6.3.2:

There is a positive relationship between a manager's perception of the importance of new management information and his role performance.

Job satisfaction The third aspect of a manager's attitude toward his job to be investigated in this thesis, job satisfaction, is largely affective in nature. Job satisfaction results from the gratification-deprivation balance between what an individual wants from his role and what he actually receives.

Newcomb (1950) suggests that taking a role is at first often only a means of satisfying certain motives, but that means often become ends and taking the role becomes itself a source of satisfaction. When this occurs the more an individual is satisfied in his role, the more likely he is to engage in adequate role behavior.

A number of investigators have found a linear relationship between liking a task and degree of success (Locke, 1966). Hartley and Hartley (1965) point out that satisfaction offered by roles as well as role prescriptions have a profound impact on the comfort and effectiveness of the individual in role playing. However, Katz, et al. (1950, 1951) found that more productive employees engaged in highly routine jobs are less satisfied with the work than are less productive workers.

Likert indicates that "[a]s tasks become more varied and require greater training and skill, the relationship [between satisfaction and performance changes] progressively from the negative to positive" (Likert, 1961, p. 16). Other authors

have found similar relationships (Hoppock, 1935; Katz and Kahn, 1952; Super, 1939). "For professional work [e.g. management] there is a positive relationship between job satisfaction and performance" (Likert, 1961, p. 16).

Specific hypothesis 6.3.3:

There is a positive relationship between a manager's job satisfaction and his role performance.

Job satisfaction is discussed in relation to occupational role by Krech and others (1962). They indicate that job satisfaction has four bases: (1) satisfaction with the material rewards of the job, (2) satisfaction with the work, (3) satisfaction with the company as an organization, and (4) satisfaction with other individuals one is working with.

On the basis of the above classification, managerial role satisfaction of concern in this thesis will consist of (1) satisfaction with the material rewards of managing a farmer cooperative, (2) satisfaction with managing job itself, (3) satisfaction with the farmer cooperative one works for, and (4) satisfaction with other employees and the board with which one works.

Attitudes toward environmental objects Attitudes toward system objects have been discussed in the preceding sections. These attitudes govern the ways in which a manager behaves toward objects within the cooperative. The other

salient objects which he must orient himself to are objects outside the cooperative in the task environment. As presented in earlier discussion, the most important objects in the task environment are customers, advisors, other community organizations, and competitors. What is important in the manager's orientation to customers, advisors, and community organizations is how he tends to behave toward these objects. The important factor to consider with respect to the other salient object in the task environment, competition, is how his attitude toward the competitive situation affects his behavior in other areas.

As indicated earlier, if the manager and employees perceive that they have little power and control over profitability of the cooperative because of the restrictions of the competitive situation, they are apt to become apathetic and disinvolved. If the manager holds a pessimistic attitude towards his situation, he may decide that efforts to better his performance would be futile. One could argue the opposite, that managers who perceive the situation as difficult will tend to try harder, but Beal and Bohlen (1962) indicate that this generally is not the case among farm supply dealers. They indicate that if managers perceive the competition as strong, they tend not to make efforts to promote sales. They go on to state that another consequence of this perception may be the reduction of markups in an

effort to compete which leads to the inability to offer additional customer services which ultimately results in a greater loss of profits.

Sub-general hypothesis 6.4:

There is a positive relationship between a manager's attitude toward his competitive situation and his role performance.

Cognitive orientation--knowledge

Three aspects of cognitive orientation were discussed in the preceding chapter--intelligence, symbolic skills, and beliefs and knowledge. It was indicated at that time that only knowledge factors would be investigated in this analysis.

An individual's knowledge will be construed as the degree to which an individual's constructed world of relationships agree with relationships supported by scientific inquiry. It is assumed that the more knowledge or "correct beliefs" that a manager has about the nature of things, the more accurately he can evaluate his situation and perform efficaciously on the basis of his correct assessment.

Greater respect is usually afforded a knowledgeable manager by his subordinates, and greater power and freedom awarded him by his superiors. Customers are more apt to patronize a firm whose manager they trust and can turn to

for accurate advice and information regarding their farming operations (Beal and Bohlen, 1962).

General hypothesis 7:

There is a positive relationship between a manager's role-related knowledge and his role performance.

Two aspects of a manager's role-related knowledge will be focused on in this thesis--product and economic knowledge. Other aspects relevant to role performance might have been assessed, but data were not available.

Product knowledge One important operational area of the managerial role is wholesale management. One of the most important aspects of the manager's role is advising the board of directors on product decisions and selecting products to retail. To do this effectively managers need knowledge of the products. Another important operational area is retail management. The manager must know what products will meet the needs of his customers and what they will buy if he is to perform effectively in this operational area. Past research (Beal and Bohlen, 1962) has also shown that part of the managerial role as defined by farmers is to be a source of information and recommendations about products and their use. If their expectations are not met, some of their patronage is lost.

Sub-general hypothesis 7.1:

There is a positive relationship between a manager's product knowledge and his role performance.

Two types of product knowledge will be focused on, chemical knowledge and fertilizer knowledge. Knowledge about agricultural chemicals is defined as the manager's knowledge about the principles of agricultural chemicals and their use in farming operations. This knowledge includes basic principles of weed control and basic principles of insect control. Knowledge of fertilizer is defined as a manager's knowledge of the agronomic and economic principles of fertilizer and fertilizer use in farming operations and his knowledge of the fertilizer industry as it pertains to his business operations.

Economic knowledge The second aspect of role-related knowledge to be investigated is economic knowledge. As indicated in the last chapter, the basic purposes of the cooperative are economic--to attain a satisfactory level of net savings and to assist in attaining satisfactory profit levels for member firms. Thus, a very important factor in a manager's cognitive orientation to his role is knowledge that will facilitate his role behavior toward profit making. Beliefs that have a scientifically validated positive relationship to profit making will be defined as economic knowledge. A positive relationship between economic knowl-

edge and role performance is expected.

Sub-general hypothesis 7.2:

There is a positive relationship between a manager's economic knowledge and his role performance.

Two dimensions of economic knowledge will be considered in this thesis--finance knowledge and knowledge about margin determination.

Finance knowledge Finance knowledge is defined as knowledge about the economic basis of financing the cooperative. It involves the determination of where to use funds in the cooperative.

Knowledge about margin determination The more knowledge a manager has regarding some rational means of deciding the margin he takes on specific commodity lines and how this margin may be related to sales volume of the specific commodity and related commodities, the more efficiently he should be able to perform this economic aspect of his role.

Value orientation

The last aspect of status-role orientation to be discussed is value orientation. As discussed earlier, value patterns define the basic orientation of a system (personality or social) to a situation (Parsons, 1951). In this

thesis the value orientation of an individual has been defined as a set of standards that provide a general base for the interpretation of stimuli.

In selecting actors for positions in social systems attempts are usually made to select people whose value orientation is congruent with the basic values of the social system. One of the distinguishing characteristics of a formal organization (of which the business firm and cooperatives are special types) is a Gesellschaft value structure. Tonnies (1965) in describing Gesellschaft systems, indicated that individuals in these systems tend to be guided by a rational will; relationships are used to achieve rational ends. Gesellschaft relationships are affectively neutral; there is little expression of feeling.

There has been some argument among organization theorists as to whether the rational model emphasizing Gesellschaft relationships or a natural systems model should be employed in the study of formal organizations. As discussed earlier, a complete emphasis on rationality and the external pattern with no expression of sentiment would soon tear most social systems apart. Attention must sometimes be directed to less rational internal problems of integration, pattern maintenance, and tension management in which more emphasis is placed on emotion. Thus, although the predominant emphasis within formal organizations is on cognitive-rational factors,

leaders of these organizations should also have elements within their value structures which will allow them to deal with more affective problems of maintenance and integration.

The role performance factors focused on in this thesis are largely instrumental-adaptive in nature, dealing with the relation between the cooperative and the external situation--effective performance in these areas tends to be guided by rational, Gesellschaft values. Since few aspects of social-emotional behavior (in which a strong rational value orientation might be inappropriate) are included in this type of role performance, a positive relationship between a manager's rational value orientation and his role performance will be hypothesized. A particular type of rational value orientation (rational value orientation toward economic ends) will be focused on in this thesis. This decision was made because earlier research by the rural Sociology research team at Iowa State University had found relationships between this type of rational value orientation and behavior of rural Iowans (Hobbs, 1963). Another important factor in this decision was the fact that measures of this value orientation had already been developed and validity data acquired in earlier research in the project on which this thesis is based (Lee, 1969).

General hypothesis 8:

There is a positive relationship between a manager's rational value orientation toward economic ends and his role performance.

Hobbs (1963) hypothesized that rational value orientation toward an economic end is a configuration of five dimensions. These are briefly discussed below. A more complete discussion (upon which the comments below are based) of these dimensions as they apply to farmer cooperatives can be found in Lee (1969). The theoretical development of these dimensions as well as a more complete discussion of rationality can be found in Hobbs' dissertation (1963).

(1) Economic value orientation

Selection of goals is to a great extent based on one's values. Thus, a relevant value orientation for cooperative managers will be value orientation toward economic ends which includes profit making. The remaining four dimensions are concerned with value orientation in selecting means for economic ends.

(2) Scientific value orientation

It has been suggested that rational behavior utilizes scientific criteria in the process of selecting efficient means to attain a goal (Hobbs, 1963; Parsons, 1954).

Use of scientific information provides managers with a better basis to select efficient means to a given goal.

Hobbs and others (1964) report that several studies have found significant relationships between a belief in science and/or use of the scientific method and success in farm management. Similar results may be found in farmer cooperative management.

(3) Mental activity value orientation

Some people value physical work as important in itself. They may feel such activities as reading, thinking, planning and deliberating about alternatives are not important, or in fact are inconsistent with the valued "work ethic". A rational man will emphasize mental activities over physical activities in management (Heady and Jensen, 1954).

(4) Independent value orientation

The most successful farm managers have been found among innovators (Hobbs,et al., 1964). Individuals who are willing to utilize innovation tend to be independent thinkers who can make decisions without depending on others. The rational man bases his decisions on cognitive factors, independently of tradition or affective ties to referents.

(5) Risk-taking value orientation

This dimension is defined by risk taking on one end and by risk aversion on the other end. In this thesis, it is hypothesized that risk taking is associated with adequate economic performance. Theoretical rationale for this assumption is found among the points made by Hobbs and others (1964,

pp. 60-62) based on economic theory. Individuals who prefer to avoid risk tend to have short run plans and tend not to consider long run factors which may lead to higher profits.

Individuals who emphasize risk aversion may spend a great deal of money and time in obtaining information in order to reduce uncertainty involved in decision making, and in so doing may exceed the point of diminishing returns in the collection of information.

Managers who prefer to avoid risk will tend to be reluctant to use all the capital which may be available to the firm. This may lead to a failure to employ the most efficient level of resources.

Extra-system Performance

The previous sections of this chapter have focused on orientations of managers and their effect on his role performance within the cooperative. Before attention is directed to the effect of social system factors on the manager's role performance, a brief discussion will be undertaken of the relationship between his performance in other roles and the performance of his managerial role.

What a manager does outside of his role as cooperative manager often affects the cooperative. Contacts he makes through interaction in the community affect customers' and potential customers' attitudes toward him and the cooperative.

Informal relationships between the manager and advisors and competitors may also have economic consequences for the cooperative.

Miller (1961) has argued that there is no better business builder than active community contact. Aside from the obvious economic results of a manager's participation in community activities and organizations, a number of authors have found a positive relationship between participation in community organizations and managers' and executives' role performance.

It has been found that promoted executives are more likely to hold membership in civic organizations than non-promoted executives (McClaine, 1968). Wald and Doty (1954, 1960) have found that successful executives tend to be active participants in and leaders of social organizations.

This relationship between organizational participation and role performance may result from both motivational and cognitive factors. Successful executives may need to participate in many activities (Nation's Business, 1960). Thus, participation in organizations may be a measure of motivational energy, much of which is expended in the managerial role.

Baehr and Williams (1967) found that the basic factor in the relationship may be cognitive. They argue that individuals who are active in organizations and hold offices in them learn different leadership techniques that may be applied

in their managerial role in personal contact situations of various types.

General hypothesis 9:

There is a positive relationship between a manager's participation in community organizations and his role performance.

Social System Factors

Discussion to this point has been focused on characteristics of the manager. This section is devoted to a discussion of the effect of social system factors on managerial performance. Most of the discussion will focus on factors internal to the cooperative, but some discussion of the effects of other systems, advisors, on role performance will be presented.

Focal system--the cooperative

The fact that the performance of any position incumbent in a social system is to a great extent the result of social system factors was established in the last chapter. Some of the basic system factors influencing a manager's behavior discussed in the previous chapter include general norms or values, role expectations, and performance of other actors within the system.

The focus of the study upon which this thesis is based

was on determination of manager characteristics related to success with little attention devoted to social system factors. Thus, few hypotheses concerning the relation of system factors to managerial performance were developed because data were not available to test them. Data were available to test the relationship between performance and one system element (power) and one master process (socialization). Of the other social system factors discussed above, no data were gathered on system norms, but enough data were gathered on the performance of other actors within the system to investigate some relationships between board performance and the manager's performance.

Elements--power Power, one of the social system elements delineated by Loomis, will be defined in this thesis as the capability to control the behavior of others. Only one type of power, authority, will be investigated. Bierstedt defines authority as "institutionalized power" (Bierstedt, 1950, p. 733), i.e. the extent to which some status roles are afforded the right to direct other positions. As indicated in the next chapter, authority was operationally defined in this study in terms of decision-making as suggested by Loomis (1960).

If individuals are afforded little power in their status roles, they may feel that they are not performing well (whether or not this is the case) and eventually adjust their behavior

so it is congruent with this perception (Festinger, 1957).

Berelson and Steiner (1964, p. 380) indicate that individuals participate in systems most when they have considerable power relative to their superiors. Berelson and Steiner also indicate that the more responsibility an individual has, the stronger is his "...identification with and devotion to the task, the greater his independent motivation for the task... (Berelson and Steiner, 1964, p. 378).

Vroom (1964, pp. 220-284) reviewed a number of studies in which participation in decision-making was found to be positively related to productivity. Two possible causes of this relationship have been suggested. Vroom (1964, p. 229) and others (Tannenbaum, 1962) have argued that if an individual is in a position of little power, he tends to have less ego-involvement in his job and tends to be more apathetic. Tausky (1970, p. 113) has indicated that dissatisfaction resulting from being excluded from decision making tends to lead to poor performance.

Although no investigation of the dynamics of the relationship between power and performance will be attempted in this thesis, the following hypothesis, based on the above review, will be tested.

General hypothesis 10:

There is a positive relationship between a manager's power and his role performance.

Processes--socialization As indicated earlier, the only system master process to be discussed in this thesis is socialization. Merton defines socialization as involving "...the acquisition of attitudes and values, of skills and behavior patterns making up social roles established in the social structure..." (Loomis, 1960, p. 35). The socialization of interest within the cooperative is training. McGehee and Thayer define training as "...the formal procedures which a company uses to facilitate employees' learning so that their resultant behavior contributes to the attainment of the company's goals and objectives" (McGehee and Thayer, 1961, p. 3).

Warren, et al. (1967) argue that training of managers and employees in farm supply and marketing industries is "...necessary to assist in making adjustments to a rapidly changing situation..." (Warren, et al., 1967, p. 13). Bellows (1961, p. 313) sites a number of researchers who have found that training must be a consistent process because of the rapid loss of knowledge and skills. McGehee and Thayer (1961, pp. 13-14) list a number of contributions of training in terms of cost reduction and changed attitudes which ultimately manifest themselves in improved performance.

The importance of knowledge to management performance was indicated earlier in this chapter. Thus, training that

produces important managerial knowledge should also be positively related to managerial role performance. The effect of employee training on managerial performance is less direct, but may still be important. Much of the knowledge and attitudes gained by employees in training that is useful in performance of the managerial role may be transmitted through social interaction over a period of time, and eventually be incorporated into the manager's role orientation where it could have an effect on his performance. Thus, it is hypothesized that not only management training, but training of other actors within the cooperative will be positively related to managerial role performance.

General hypothesis 11:

There is a positive relationship between the amount of training within a cooperative and the manager's role performance.

Employee training As indicated above employee training may be an important factor in managerial role performance. Transmission to the manager of knowledge and attitudes acquired by the employees through training is one possible effect of employee training on managerial performance.

During the interviewing for this study it was discovered that many managers often turned to key employees as well as their board and outside advisors for advice on many decisions.

Many of them also employed the participative approach to decision making. Decisions made in this way should reflect knowledge gained by employees through training programs. These same decisions are an important factor in the assessment of managerial performance.

Sub-general hypothesis 11.1:

There is a positive relationship between the amount of training given to employees and a manager's role performance.

Manager training The purpose of training managers is for them to acquire knowledge that will be useful to them in performance of their role. Three things must happen for training to result in effective role performance: the knowledge taught must actually be applicable to the manager's situation, he must learn what is taught, and he must "transfer" this knowledge from the learning situation to his cooperative. McGehee and Thayer (1961) indicate that this "transfer" is one of the most difficult steps in the process.

Bellows (1961) in a review of research on managerial training, indicated that in all studies reviewed training had a positive effect on managerial performance, with the greatest gains in performance being made by managers who had attended college. Warren, et al. (1967) have indicated a similar positive relationship between training of managers

in retail farm supply firms and their performance.

Sub-general hypothesis 11.2:

There is a positive relationship between the amount of training given to a manager and his role performance.

Sub-systems--board of directors Action by the board of directors at the level of strategic management delimits the options open to the manager at the operational level. Thus, the structure of the system dictates a relationship between action of the board of directors and the manager's role performance.

General hypothesis 12:

There is a relationship between the action of a manager's board of directors and his role performance.

Two aspects of actions taken by the board of directors will be investigated--over-all performance and restrictions placed on the manager.

Over-all performance Action of the board of directors can put both physical and motivational restrictions on the manager. As indicated by Phillips (1962, p. 211) the manager must operate within the basic organizational and financial structures that are largely established by the board of directors. The basic features of the merchandising operation are also usually established by the board. All

major policy decisions are usually the prerogative of the board. These decisions put restrictions on managerial performance; if the decisions are bad, that fact will tend to be reflected in managerial performance.

If a manager perceives that his board is performing poorly, his motivation to perform his role may be adversely affected. Interpersonal relations may become strained if the manager feels that the board "isn't carrying its share of the load". Likert (1961) and others (Indik et al., 1961) have found that a high level of performance is frequently attained by individuals who are satisfied with the supportive behavior of their superiors.

Sub-general hypothesis 12.1:

There is a positive relationship between the over-all performance of a manager's board of directors and his role performance.

Restrictions A number of researchers have found that individuals tend to perform better if they are given more autonomy on work-related matters (Likert, 1961). Simon (1965, p. 12) has used the concept "zone of acceptance" to describe the range of activity legitimately controlled by an authority position (in this case the board of directors). If the board places too many restrictions on the manager (exercising authority beyond the zone of acceptance) the

probability of lack of compliance is heightened, and friction and lowered performance may result.

Tausky indicates that the best way of organizing relationships is in a form "...which permits individual autonomy, thereby maximizing task involvement and motivation from within" (Tausky, 1970, p. 45). He goes on to indicate that if individuals are not given some autonomy so they can feel that they are ascending in the organization, they tend to feel inferior and behave consistently with this perception.

Sub-general hypothesis 12.2:

There is a negative relationship between the restrictions placed on a manager by his board of directors and his role performance.

External systems--advisors

As indicated in the conceptual model, the effects on managerial performance of a number of systems external to the cooperative (suppliers, competitors, advisors) might be investigated, but only one, advisors, will be discussed. The use of qualified advisors by the manager should give him more information to make decisions more adequately. The services of some advisors, e.g. wholesale representatives, can be obtained at no cost to the cooperative. Other assistance, e.g. legal and accounting may be acquired only at relatively high cost, but the advice obtained may allow the manager to

avoid making costly errors.

The improvement of management and/or firm performance obtained through the use of advisors must also be weighed against its cost, but there is some indication that the benefits frequently outweigh the costs. Thompson, in an extensive study of small manufacturing enterprises, found that those businesses that failed tended to rely less on outside management and technical assistance than their counterparts still in business (Thompson, 1963).

General hypothesis 13:

There is a positive relationship between the use of advisors and a manager's role performance.

Outcomes of Role Performance-- Economic Success

As indicated earlier, the second measure of managerial success to be employed in this thesis is economic success of the cooperative. All the factors discussed in the preceding section should have an effect on profitability of the cooperative through managerial performance, but the predominant effect on economic success for some of these factors may not be through the effect they have on managerial performance. Many of the factors discussed in the preceding sections may also affect the performance of other actors within and outside of the cooperative that ultimately affect

the cooperative's economic success. Some of these relationships are discussed below. This discussion is followed with a tabular presentation of theoretical hypotheses in which these concepts and concepts discussed earlier in this chapter are related to economic success of the cooperative.

Socialization

Management experience may have an effect on profitability of the cooperative other than through the performance of the manager as measured in this study. The more experienced manager may employ techniques useful in his particular situation that might not be defined by experts as "good" performance, but are never-the-less efficacious.

Performance as defined in this thesis has a task focus. Social-emotional techniques developed by experienced managers over a period of time would not be indicated in the measure of role performance, but may have a considerable effect on economic success of the cooperative.

Personality system--general orientation

A number of studies reviewed earlier in this chapter indicated that there is a strong relationship between the interpersonal trait of dominance and various forms of leadership. More effective leadership resulting from this orientation toward dominance should result in improved employee

performance and greater economic returns to the cooperative.

Personality system--manager's status-role orientation

Motivational orientation There may be a more direct relationship between a manager's goal of profit maximization and economic success of the cooperative than between this goal and his role performance. If his desire to attain this goal is strong enough, he may use methods to attain profit that might not be classified as "good" role performance. The manager's emphasis on profit may also eventually be internalized by his employees and be reflected in their role performance.

As indicated earlier, individuals who have negative self-concepts tend also to have negative perceptions of others. If a manager has a negative attitude toward himself as a manager, he may also have negative attitudes toward his employees that would be manifested in his behavior. Negative behavior toward employees might result in lowered productivity and turnover which would have economic consequences for the cooperative. Vroom (1964, p.213) indicates that correlations as high as .64 have been found between a superior's attitude toward his men and the productivity of the work group.

Many perceptions and attitudes of employees are formed on the basis of attitudes of the manager. If the manager has high job satisfaction and sees the cooperative as a good

place to work, employees may define the situation similarly, and this positive attitude may show up in their performance.

As indicated earlier, a manager's attitude toward the competitive situation can have a considerable effect on the profitability of the cooperative. Beal and Bohlen (1962) indicate that managers who perceive competition as strong tend not to promote sales. This may frequently result in a reduction of markups, decreased customer services, loss of customers and loss of profit. The apathy and disinvolvement of the manager that may result from this perception of the competitive situation could also result in similar attitudes being developed in employees which would probably lead to a decrease in their effectiveness.

Cognitive orientation Customers are more apt to patronize firms whose managers they can turn to for advice and information regarding their farming operations. Beal and Bohlen (1962) indicate that farmers tend to pay a higher price for products if expert information is furnished with the products. They also indicate that managers who have greater amounts of one type of product knowledge (fertilizer) tend to have greater volume, greater mark-up, and greater profit in this department. A manager's economic knowledge also tends to have effects on profit other than through his role performance. Economic knowledge that the manager possesses may carry over to the board of directors through the

manager's advisory role and have an effect on major economic decisions.

Value orientation Just as a manager's attitudes may over a period of time be internalized by his employees, so may his major values. To the extent that a manager's rational value orientation toward economic ends is internalized, his employees' task performance may be improved through greater attention to cognitive factors in their jobs.

Performance

Extra-system performance The earlier discussion of a manager's participation in community organizations focused on motivational and cognitive factors, but perhaps the most important effect of this type of activity is the influence it has on the attitudes and behavior of customers and potential customers, advisors, and competitors. The impression they receive of the manager and his cooperative through these non-business relationships may have a considerable effect on their patronage and/or their cooperation.

Managerial role performance It has been argued throughout this thesis that there is a positive relationship between a manager's role performance and the economic success of the cooperative. This relationship will be hypothesized, and presented with the other theoretical hypotheses as general hypothesis 27 at the end of this discussion.

Focal social system--the cooperative

Elements--power The manager's power may have an indirect effect on economic success of the cooperative through employee perceptions and performance. Likert (1961) has indicated that employees tend to perform better for supervisors who have more influence with their superiors.

Processes--socialization (training) As indicated earlier, employee training may have an effect on profit indirectly through influence on the manager's knowledge and performance, but the more direct effect on profit of employee training quite probably comes from improved employee performance resulting from the training. Just as employee training may become incorporated into the manager's orientation, knowledge and attitudes acquired by the manager through training may be acquired by employees and affect their performance.

Performance of sub-systems

Actions of the board Strategic management decisions made by the board have an effect on the manager's performance by restricting or enhancing his alternatives for action, but the more direct effect of the board's performance on economic success of the cooperative is in making major decisions on financing and merchandising.

Employee turnover No data were available on employee job performance, but information had been gathered on the number of individuals who had left or been fired from their jobs (employee turnover).

Employee turnover can be a serious problem to an organization. The most immediate loss to the system is the disruption caused by the temporary vacancy of a status-role, and the inadequate performance of a new incumbent until he is adequately socialized.

Bellows (1961) interprets employee turnover as an index of dissatisfaction, and states that employee turnover may be an indicator of other factors related to dissatisfaction. He indicates a strong relationship between turnover and absenteeism (Bellows, 1961, p.50). Thus, organizations with high turnover of employees may also be losing efficient employee performance through high absenteeism. Employees who are frequently absent from their jobs are also apt to perform poorly when they are working. On the basis of the probable loss in employee performance and selection and training costs accompanying high turnover rates it is hypothesized that turnover is negatively related to economic success of cooperatives.

The general hypothesis covering the relationship of the performance of these two sub-systems (board and employees) to economic success is presented with the other theoretical hypotheses as general hypothesis 25 at the end of this discussion.

Two sub-general hypotheses (25.1 and 25.2) referring to the action of the board and employee turnover are also presented along with two specific hypotheses (25.1.1 and 25.1.2) which refer to the two aspects of the action of the board of directors discussed earlier.

External systems--advisors

The earlier discussion of advisors focused on the knowledge that the manager could acquire from advisors that would assist him in his decision making. Another aspect of the use of advisors is the fact that they frequently are employed in roles that go beyond the advisory capacity, and profits of the cooperative are affected as a direct result of actions of advisors. For example, certain legal and accounting decisions may be left completely in the hands of attorneys and accountants, and these decisions may have considerable impact on profits of the cooperative.

Statement of hypotheses

Hypotheses in which the concepts discussed in this chapter are related to the concept "economic success of a cooperative" are presented below. The concepts and order of presentation of hypotheses are the same as those employed in the discussion of role performance, with the exception of the addition of the hypotheses regarding a manager's role performance and "turnover", and the reordering of the hypotheses concerning

performance of sub-systems because of the addition of the "turnover" hypothesis.

General hypotheses (14-27)

There is a relationship[1] between each of the following theoretical concepts and the economic success of a cooperative:

G.H. 14: a manager's education (positive)

G.H. 15: a manager's favorable life experiences (positive)

G.H. 16: a manager's management experience (positive)

G.H. 17: a manager's interpersonal traits

G.H. 18: a manager's self-confidence (positive)

G.H. 19: a manager's motivational orientation in his managerial role

G.H. 20: a manager's role-related knowledge (positive)

G.H. 21: a manager's rational value orientation toward economic ends (positive)

G.H. 22: a manager's participation in community organizations (positive)

G.H. 23: a manager's power (positive)

G.H. 24: the amount of training within a cooperative (positive)

G.H. 25: the action of sub-systems within a cooperative

G.H. 26: the use of advisors (positive)

G.H. 27: a manager's role performance (positive)

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[1]If the hypothesis is directional, direction is indicated in parentheses.

Sub-general hypotheses

There is a relationship between each of the following theoretical concepts and the economic success of a cooperative:

S-g.H. 17.1:[1] a manager's interpersonal trait of dominance (positive)

S-g.H. 17.2: a manager's interpersonal trait of achievement (positive)

S-g.H. 19.1: a manager's orientation toward profit maximization (positive)

S-g.H. 19.2: a manager's attitude toward social objects within the cooperative

S-g.H. 19.3: a manager's attitude toward his role (positive)

S-g.H. 19.4: a manager's attitude toward his competitive situation (positive)

S-g.H. 20.1: a manager's product knowledge (positive)

S-g.H. 20.2: a manager's economic knowledge (positive)

S-g.H. 24.1: the amount of training given to employees (positive)

S-g.H. 24.2: the amount of training given to a manager (positive)

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[1]S-g.H. is an abbreviation for sub-general hypothesis and is used throughout this dissertation. The number to the left of the decimal refers to the general hypothesis, the number to the right of the decimal refers to the sub-general hypothesis, third and fourth numbers in the sequence will refer to specific and empirical hypotheses respectively.

S-g.H. 25.1: the action of a manager's board of directors

S-g.H. 25.2: employee turnover (negative)

Specific hypotheses

There is a relationship between the following theoretical concepts and the economic success of a cooperative:

S.H. 19.2.1: a manager's attitude toward himself as manager (positive)

S.H. 19.2.2: a manager's attitude toward his employees (positive)

S.H. 19.3.1: the amount of power a manager sees associated with the managerial role (positive)

S.H. 19.3.2: a manager's perception of the importance of new management information (positive)

S.H. 19.3.3: a manager's job satisfaction (positive)

S.H. 25.1.1: the over-all performance of a manager's board of directors (positive)

S.H. 25.1.2: the restrictions placed on a manager by his board of directors (negative)

CHAPTER FOUR: METHODS

This chapter has three foci. First, a description will be given of methods, procedures, and instruments used in data collection. Second, empirical measures of concepts used in the derivation of hypotheses will be presented. And third, methods used in data analysis will be set forth.

Data Collection[1]

Sample selection and characteristics

Respondents were randomly selected from the population of managers of Iowa farmer cooperatives. All branches of individual cooperatives were excluded due to the difficulty in determining the effect of increased restrictions placed on them by the parent cooperative.

The funders of the research project[2] required the businesses studied to be fertilizer dealerships having a minimum

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[1]This discussion of data collection is based on the similar discussion in the author's Masters thesis (Duncan, 1969). Both theses are based on the same research project.

[2]Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa. Project No. 1626. This project was also funded by Tennessee Valley Authority, Muscle Shoals, Alabama, Contract TV-15676, Project Agreement No. Iowa-1831 and United States Department of Agriculture, Farmer Cooperative Service, Washington, D.C., Agreement No. 12-04-2-71. Project co-leaders were George M. Beal, Joe M. Bohlen, and Richard D. Warren of the Department of Sociology and Anthropology, Iowa State University, Ames, Iowa 50010.

volume level of $15,000. of fertilizer sales during the last completed fiscal year. This criterion resulted in a useable population of 305 managers from the original population of 342. The second criterion employed in sample selection was the requirement that each manager must have held his present position for at least 18 months. This gave some assurance that the measures of economic success of the cooperative would reflect the performance of each respondent and not that of his predecessor, and provided for collection of economic data for different time periods. This further reduced the useable population by about 20 percent. A random selection of 100 managers and a substitute list were then made. During the interviewing four substitutes were used for two refusals and two managers who did not meet the second criterion. Two businesses that did not qualify as cooperatives and three oil cooperatives were deleted from the final sample to yield a sample for analysis of 95.

A few characteristics of the sample are summarized in Table 4.

The range on the reported variables indicates that the managers had a considerable amount of variation on those variables. However, the restrictions imposed by the sampling procedures must be considered in drawing conclusions and making inferences.[1]

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[1]See Himes (1967) for further details on sample selection and characteristics.

Table 4. Characteristics of the sample[a]

Characteristics	Sample		
	Range	Mean	S
Manager's age	29-68	45.32	10.34
Manager's education (years of formal education)	8-16	12.70	1.85
Years as manager in present position	2-39	11.91	8.08
Number of employees	2-60	12.60	10.74
Average net commodity sales 1964-1965	$226,000-10,869,000	$1,791,600	$1,472,513

[a] n = 95.

Field instruments and procedures

The data were collected during July and August of 1966. A survey technique employing two interview schedules and two questionnaires was used. Interviewing was carried out in three phases to minimize the amount of time asked of a respondent at any one time. The author participated in the interviewing which was carried out by other graduate students and trained interviewers.

Financial data were gathered in conjunction with the first interview schedule which pertained to managerial goals in business operation. Upon completion of this schedule respondents were given a questionnaire to fill out and return by mail.

The sample had been previously randomly split into halves so that one half of the sample received one type of questionnaire, and the other half received a different type (with the exception of 161 attitude statements that were constant across the two subsamples). Respondents were given verbal and printed instructions for responding to the items in the questionnaire, and were told that a second interviewer would contact them within a month to administer the second schedule and pick up the questionnaire if it had not been returned by mail.

The third phase consisted of the administration of the second schedule which contained items relating to the respondent's job performance, job-related knowledge, job satisfaction, perceptions of his social environment, and personal data.

The author assisted Dan Himes (project coordinator) and project leaders, Drs. Beal, Bohlen, and Warren in the development of the third phase schedule and the attitude data in the questionnaires; the author had primary responsibility for the development of the personality measurement sections of the questionnaires.

Concept Operationalization

In this section a description of the methods used to obtain measures of the theoretical concepts will be presented.

The data for this study were collected prior to the theoretical development of this thesis. This situation of an ex-post-facto study placed some limitations upon operationalization of the theoretical concepts. An effort was made to obtain operational measures for all the theoretical concepts. Where it was not possible to obtain direct and adequate operational measures, indicators were sought. This approach was deemed more reasonable for an exploratory study than taking the alternative of completely omitting a theoretically important variable.

Due to the amount of measurement error in most of the operational measures, the decision was made to cross-validate results wherever possible. Of particular interest was the cross-validation of multiple regression model building and network analysis.

Since the sample size (n = 95) was too small to allow for cross-validation by splitting the sample, an alternate cross-validation procedure for the regression analyses suggested by Wolins (1967) was employed. Selected measures for each variable subject to considerable measurement error were obtained. Upon the recommendation of Dr. Richard Warren those measures that had alternate-forms reliability of at least

.40[1,2] were randomly partitioned into two sets--the validation set and the cross-validation set.

Wolins states that:

> [i]f the variables are measured highly reliably and the number of observational units, N, is small, this design will be better than the usual one. However, if the reliability of the measures is generally low and N is large then the conventional cross-validation procedure would seem to be superior (Wolins, 1967, p.825).

In most cases the measures available for a variable consisted of a number of individual items in a scale. Where this was the case items were randomly partitioned into the two sets if the reliability criterion was satisfied. In two cases, measures of dominance and attitudes toward employees, alternate scales were available with sufficient alternate-forms reliability, and these scales were randomly assigned to the validation set and cross-validation set.

For concepts that were operationally defined with only one question, no alternate form was available.

All the empirical measures developed (composites and alternate forms) were employed in the two-variable analyses. For the all-variable regression models, composite measures

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[1]Warren, Richard D., Department of Sociology and Anthropology, Iowa State University, Ames, Iowa. Minimum reliability level. Private communication. 1971.

[2]One exception was made, again upon Dr. Warren's recommendation. The alternate-forms reliability of rational value orientation was marginal (.388). However, since past research (Hobbs, 1963; Lee, 1969) had indicated the importance of this variable in predicting performance, the alternate forms were included in the analysis.

(before partitioning) were employed. In the few cases where only two measures of a variable were available, the more comprehensive of the two was employed.

In the multiple regression model building and network analyses, measures in the validation set were used to select predictors; measures from the cross-validation set were used to estimate beta and path coefficients.

The empirical measures are numbered as they are discussed in this chapter so that reference can be made back to them from the various analyses discussed later. A table of intercorrelations of empirical measures is presented in Appendix H.

The discussion in the remainder of this section will focus on the means by which the empirical measures of each of the concepts used was developed.

Socialization

Education (X_1) An index of amount of educational experience appropriate to the managerial role was computed by summing scores on three variables--manager's years of formal education, manager's years of vocational agriculture, and early management training.

Manager's years of formal education This variable was measured by asking each manager the following question:

How many years of formal education have you completed?

The actual number of years of formal education given by the

manager has been used as the operational measure of this concept. The range of scores on the Years of Formal Education variable is from 8-16, the mean is 12.70, and the standard deviation is 1.85.

Manager's years of vocational agriculture Each respondent was asked the following question:

> [If attended high school]: Did you take vocational agriculture in high school?

Those managers who had not attended high school were given score zero. "No" and "Yes" responses were given scores 1 and 2 respectively. Respondents who responded in the affirmative to the first question were asked the second:

> How many years of vocational agriculture did you take?

Managers to whom this question did not apply were given score zero. For managers to whom the question was applicable, the actual number of years of vocational agriculture mentioned was recorded. The total of the manager's response to both questions was used to represent years of vocational agriculture.

The range of scores on the Years of Vocational Agriculture variable is from 0-6, the mean is 2.23, and the standard deviation is 1.69.

Management training Responses to two questions were used to operationalize this concept.

Prior to or during your first years of management, did you attend any management training schools, workshops or take any business courses in school?

Code
1 = No
2 = Yes

[If yes to the above question]: How many and what were they? (open end)

Code
0 = Does not apply
1 = Workshops and training schools (sponsored by regional co-op or Iowa Institute of Cooperation)
2 = Short courses (at Iowa State University)
3 = Night school
4 = College correspondence course(s)
5 = (Regular) college course(s)

The total of the manager's responses to both questions was used to represent management training. The range of scores on the Management Training variable is from 0-7, the mean is 2.51, and the standard deviation is 1.94.

The distribution of scores on the Education Index by category is presented in Table 5. Data in the table are given for three samples--total (n = 95), Farm Service (n = 13), and other cooperatives (n = 82). Several items of data necessary for the computation of profit figures for 13 Farm Service cooperatives in the sample were not available. Upon further investigation of data gathered from managers in these cooperatives, they were found to also differ on other characteristics. Because of these differences, data are presented in this and following tables for the total sample and the two subsamples of Farm Service and other cooperatives.

Table 5. Distribution of scores on the Education Index (X_1)

Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
9 and below	2	2.1	0	0	2	2.4
10-11	3	3.2	0	0	3	3.7
12-13	2	2.1	0	0	2	2.4
14-15	20	21.1	1	7.7	19	23.2
16-17	25	26.3	2	15.4	23	28.0
18-19	15	15.8	5	38.5	10	12.2
20-21	11	11.6	2	15.4	9	11.0
22-23	11	11.6	3	23.1	8	9.8
24-25	3	3.2	0	0	3	3.7
26 and above	3	3.2	0	0	3	3.7
Total	95	100.2	13	100.1	82	100.1
	Range = 9-27 $\bar{X}$ = 17.579 S = 3.796		Range = 14-23		Range = 9-27 $\bar{X}$ = 17.366 S = 3.903	

For purposes of this study Farm Service companies have been treated as cooperatives, but they differ in certain basic ways from cooperatives in the sample.

Most of the cooperatives are organized on the basis of the Rochdale principles of cooperation:

1. Goods to be sold at prevailing prices
2. Savings to be distributed in proportion to purchases
3. Interest on capital to be restricted to a fixed rate
4. Membership to be open to all
5. Each member to have one vote
6. Full information to be presented to members

7. All business to be transacted on a cash basis[1]

8. High standards of commercial honesty

The Farm Service companies subscribe to most of these principles, but their membership is restricted to Farm Bureau members, and some aspects of voting do not conform to the one-man-one-vote rule as explained below.

There are four basic ways in which cooperatives differ from other ways of doing business:

1. They are set up by a group to obtain services for themselves at cost, not to obtain profit from rendering services to others.

2. Cooperatives try to render the greatest benefit to members--not to make the largest possible profit.

3. They distribute surplus income over the cost of doing business among those served in proportion to use of services--not in proportion to investment.

4. They are controlled by patron members--each of whom is usually allowed a single vote--not by owners of capital stock (if any) in proportion to the number of shares they hold.

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[1]Although a majority of cooperatives were initially organized this way, most cooperatives now operate on a credit basis.

Farm Service companies differ from cooperatives on the fourth point above. Farm Bureau members own and operate their local companies. FS Services incorporated, the regional wholesale company, is basically owned by the state Farm Bureaus of the three states in which it operates, i.e. Iowa, Illinois, and Wisconsin. All local companies and the regional are affiliated with and supervised by the state Farm Bureaus of the three states.

Unlike other cooperatives in the sample, the Farm Service companies are not organized under cooperative laws; they are organized as general corporations.

In 1939 the Iowa Farm Bureau made the decision to have controlling interest in any commercial enterprise with which they were affiliated. They wanted to be certain that the supply companies they created would continue to help build the Farm Bureau and that dividends and other benefits would be limited to Farm Bureau members only.

A special voting stock called Organization Stock was issued to the Iowa Farm Bureau giving them control of the service companies. This Organization Stock is also included in the articles of incorporation of the county service companies. This stock assures that the county companies will purchase from the affiliated regional and that the companies will maintain their ties with the Iowa Farm Bureau.

This stock mechanism allows the Iowa Farm Bureau

Federation to exert considerable influence on the local Farm Service company's operations if they see fit to do so.

The basic goal of all cooperatives is to provide service to members at cost. The Farm Service companies share savings with members as do cooperatives, but they have other unique goals. The Farm Service companies are essentially an arm of the Farm Bureaus in the three states. The major objective of these Farm Bureaus is that of providing a voice for farmers in the general assemblies of their respective states. The Farm Service companies are expected to provide support for the Farm Bureau, and provide increased revenue for county and state units of the organization.

The regional company, FS Services Incorporated, is governed by one board elected by 16 districts, covering a three state area, on the basis of volume. The board is comprised of the 16 district directors who are farmers and three members who are elected at large.

The staff of the regional is extremely competent, and appears to carry more influence in basic decision making than the board of directors.

All managerial candidates are screened by the personnel director at the home office of FS Services. The locals then select their managers from among these screened applicants. The top level management of FS Services is extremely competent, and once a manager is selected for a local, they

exercise considerable control over his development.

One attribute that is emphasized in selection of managers is innovativeness. Thus, it is not surprising that Farm Service managers in this sample tend to place greater emphasis on new management information than do other managers. The Farm Service managers also tend to have more education and greater economic knowledge.

Once a Farm Service manager is selected he is expected to participate in a number of activities sponsored by the Farm Bureau. A significant difference was found between organizational participation of Farm Service managers and other managers in the sample.

In non-Farm Service cooperatives managers are selected by local units, frequently the local boards will seek advice from the Omaha Bank of Cooperatives, or from the various regional cooperative wholesale organizations which are operative in the area. Most local boards in these non-Farm Service cooperatives tend not to provide the guidance and goals that FS Services provides its managers.

Inherent in the Farm Service structure is the tendency for the state organization to provide strong guidance and supervision for the local managers. Data from the present sample indicate that Farm Service managers perceive their boards as putting few restrictions on them, and tend to rate their boards' performance less favorably than did managers

in other cooperatives.

There is considerable evidence to indicate that training procedures in FS Services differ from those of cooperatives. In the Farm Service companies training decisions are made by the central office, not by the local board of directors. The central office insists upon continuous high quality training for all managers in the system, and they carefully and frequently review and evaluate this training. In the federated cooperatives no central authority tells managers that they must have training, and no central authority checks to be certain that they acquire the training they need.

Farm Service managers apparently make much more use of advisors in FS Services than other cooperative managers make of similar sources of advice available to them. Much of this use of advisors appears to be insisted upon by FS Services. Advice is available to other managers from the staff of large federations, but 75 percent of cooperatives are associated with more than one federated cooperative, and the ties are neither so strong nor so direct as is the case with Farm Service.

Another basic difference between the two types of organizations is that Farm Service companies have always focused in the area of farm supply; the Farm Service companies in this sample were not engaged in marketing activities. A large part of the operations of all other cooperatives in the

sample is grain marketing. In grain marketing cooperatives managers tend not to promote their products as strongly as mangers in Farm Service companies that are strictly farm supply. Among the product lines the Farm Service companies also tend to stress petroleum and fertilizer more than other cooperatives, although they have recently expanded into many other areas.

Favorable life experiences (X_2) Managers' perceptions of the favorableness of their life experiences was assessed with a single biographical-data question:

How do you feel about the breaks you've had in life?

Code
1 = I have had nothing but bad breaks
2 = I have had more than my share of bad breaks
3 = I have had about an even share of luck
4 = I have had more good breaks than bad ones
5 = luck has been my way practically all the time

a. _____ I have had nothing but bad breaks
b. _____ I have had about an even share of luck
c. _____ I have had more than my share of bad breaks
d. _____ luck has been my way practically all the time

The distribution of scores on the Favorable Life Experiences Index is presented in Table 6.

Table 6. Distribution of scores on the Favorable Life Experiences Index (X_2)

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
I have had nothing but bad breaks	0	0	0	0	0	0
I have had more than my share of bad breaks	1	1.1	0	0	1	1.2
I have had about an even share of luck	33	34.7	3	23.1	30	36.6
I have had more good breaks than bad ones	55	57.9	8	61.5	47	57.3
Luck has been my way practically all the time	6	6.3	2	15.4	4	4.9
Total	95	100.0	13	100.0	82	100.0
	Range = 2-5 $\bar{X}$ = 3.695 S = .600		Range 3-5		Range = 2-5 $\bar{X}$ = 3.659 S = .589	

Job-related socialization (X_3) Management experience scores for each respondent were determined on the basis of responses to the following question:

> How long have you had full responsibility for the management of a business?

The actual number of years given by the respondent was used as a measure of management experience. The distribution of scores on the Management Experience Index is presented in Table 7.

Table 7. Distribution of scores on the Management Experience Index (X_3)

Scor Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
5 and below	13	13.7	3	23.1	10	12.2
6-10	23	24.2	0	0	23	28.0
11-15	16	16.8	2	15.4	14	17.1
16-20	18	18.9	2	15.4	16	19.5
21-25	10	10.5	3	23.1	7	8.5
26-30	7	7.4	2	15.4	5	6.1
31-35	4	4.2	1	7.7	3	3.7
36-40	2	2.1	0	0	2	2.4
41 and above	2	2.1	0	0	2	2.4
Total	95	99.9	13	100.1	82	99.9
	Range = 3-48 $\bar{X}$ = 15.758 S = 9.831		Range = 3-35		Range = 3-48 $\bar{X}$ = 15.317 S = 9.912	

Personality system--general orientation

Interpersonal traits For one-half of the sample, personality traits were assessed with the Edwards Personal Preference Schedule (EPPS); for the other half of the sample,

the California Psychological Inventory (CPI) was employed.

One of the factors frequently contributing to the low validity of personality measures is social desirability. Much of the variance on many self-inventory measures can be explained by a factor concerning the tendency to say good rather than bad things about one's self (Nunnaly, 1967). Evidence of the pervasive effects of this response set is summarized by Edwards (1964).

In an attempt to avoid the effects of social desirability the EPPS (which has controls for social desirability) was given to half of the sample. Use of the EPPS leads to some problems in scaling, however. The EPPS yields ipsative scores, reflecting intra-individual differences rather than normative scores reflecting interindividual differences. The forced choice, paired-comparison format of the EPPS requires that the total scores for each subject are constant; this leads to ordinal ipsative scales (Radcliffe, 1965).

Because of time limitations and an interest in achievement the California Psychological Inventory was given to the second half of the sample without the EPPS. The CPI (like the EPPS) is said to measure characteristics of personality

> ...which have a wide and pervasive applicability to human behavior, and which in addition are related to favorable and positive aspects of personality rather than the pathological (Gough, 1957, p. 7).

The CPI is composed of true-false items which would

normally imply no problem of ipsativity, but many of the items load on more than one scale which brings the ipsativity problem to the fore in a slightly different manner than is the case with the EPPS. To avoid the ipsativity problem with the CPI, items that loaded on two or more of the three scales used in the study were omitted in computing scores for these scales.

Two traits reported in this analysis (dominance and achievement) were measured with the EPPS on the first half of the sample and the CPI on the second half of the sample. This was necessary because neither instrument was given to the entire sample. The EPPS scales of dominance and achievement were in an approximate t distribution. T scores given in the EPPS manual computed from Edwards' general adult sample were substituted for the managers' raw scores in the analysis.[1] The three modified scales on the CPI were also converted to a t distribution from raw scores on the basis of this sample of managers.

Dominance Two indices of dominance were computed. Dominance Index #1 is the first to be discussed. For the first half of the sample, dominance was operationally defined by t scores (general adult sample) on the EPPS trait of dominance.

For the second half of the sample, dominance was

[1]The t distribution has a mean of 50 and a standard deviation of 10.

operationally defined with a modified CPI Dominance Scale. Items on the CPI Dominance Scale that were also included in the CPI Achievement Scale were omitted. Raw scores on the remaining items were converted to a t distribution. These converted scores were used as the operational measure of dominance on the second half of the sample.

Since both scales were now in the form of a t distribution they were treated as one variable so that an operational measure of dominance could be obtained for the entire sample. The distribution of scores on Dominance Index #1 is presented in Table 8.

Table 8. Distribution of scores on Dominance Index #1 (X_4)

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
29.08 and below	1	1.1	0	0	1	1.2
29.09 - 34.31	2	2.1	0	0	2	2.4
34.32 - 39.54	9	9.5	0	0	9	11.0
39.55 - 44.77	12	12.6	2	15.4	10	12.2
44.78 - 50.00	14	14.7	1	7.7	13	15.9
50.01 - 55.23	14	14.7	4	30.8	10	12.2
55.24 - 60.46	18	18.9	0	0	18	22.0
60.47 - 65.69	17	17.9	4	30.8	13	15.9
65.70 - 70.92	7	7.4	2	15.4	5	6.1
70.93 and above	1	1.1	0	0	1	1.2
Total	95	100.0	13	100.1	82	100.1
	Range= 25.08-73.71		Range= 42.04-68.02		Range= 25.08-73.71	
	$\bar{X}$= 52.07				$\bar{X}$= 51.43	
	S= 10.47				S= 10.61	

Dominance Index #2 was computed by summing scores on a number of bio-data items that were found to be correlated with dominance (as measured by the EPPS and cross-validated with the CPI measure) in this study. The items that were summed to form the index are listed below.

How would you rank yourself as a manager?

a. (1) in the top 5%
b. (2) in the upper 20%
c. (4) in the upper 50%
d. (5) in the lower 50%
e. (3) I don't know

Code
1.019 = in the top 5%[1]
2.039 = in the upper 20%
3.058 = I don't know
4.077 = in the upper 50%
5.095 = in the lower 50%

Which one of the following have you the most opportunity to do in your present job?

a. (0) use my imagination
b. (1) exercise administrative ability
c. (-1) do the job as it should be done
d. (0) relax now and then
e. (0) exercise my initiative

Code
-2.500 = do the job as it should be done
2.119 = exercise administrative ability
0.0 = all other responses (a, d, and e)

How do you feel about your self-confidence?

a. (5) I am very confident of myself in any phase of activity
b. (4) I am quite confident of myself in most phases of activity

---

[1]Raw scores assigned to responses were divided by the item's standard deviation to yield standard scores. The raw scores initially assigned to responses are presented in parentheses.

c. (3) I have quite a bit of self-confidence about my intellectual ability, but I am not as self-confident about my social abilities
d. (2) I have quite a bit of self-confidence about my social ability, but I am not as self-confident about my intellectual ability
e. (1) I lack some self-confidence in both intellectual and social activities

Code
.791 = I lack some self-confidence in both intellectual and social activities
1.582 = I have quite a bit of self-confidence about my social ability, but I am not as self-confident about my intellectual ability
2.373 = I have quite a bit of self-confidence about my intellectual ability, but I am not as self-confident about my social abilities
3.164 = I am quite confident of myself in most phases of activity
3.956 = I am very confident of myself in any phase of activity

The distribution of scores on Dominance Index #2 is presented in Table 9.

The intercorrelation of the two dominance indices is .4458.

Achievement (X_6) For the first half of the sample achievement was operationally defined by t scores (general adult sample) on the EPPS trait of achievement.

For the second half of the sample achievement was operationally defined by combining modified CPI Achievement-via-conformance and Achievement-via-independence scales. Items on either achievement scale that loaded on the other achievement scale or the Dominance Scale were omitted in computing

Table 9. Distribution of scores on Dominance Index #2 (X_5)

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
-6.002 and below	2	2.1	0	0	2	2.4
-6.001- -3.530	7	7.4	1	7.7	6	7.3
-3.529- -1.059	27	28.4	5	38.5	22	26.8
-1.058- 1.412	33	34.7	4	30.8	29	35.4
1.413- 3.883	23	24.2	3	23.1	20	24.4
3.884 and above	3	3.2	0	0	3	3.7
Total	95	100.0	13	100.1	82	100.0
	Range= -6.806- 4.264		Range= -3.976- 2.453		Range= -6.806- 4.264	
	$\bar{X}$ = -.461				$\bar{X}$= -.417	
	S = 2.471				S= 2.513	

raw scores. Raw scores on the two modified scales were summed and the total was converted to a t distribution.

The distribution of scores on the Achievement Index is presented in Table 10.

Self-concept (X_7) Managers' self-confidence was assessed with a single biographical-data question:

How do you feel about your self-confidence?

a. _____ I am very confident of myself in any phase of activity
b. _____ I am quite confident of myself in most phases of activity
c. _____ I have quite a bit of self-confidence about my intellectual ability, but I am not as self-confident about my social abilities

Table 10. Distribution of scores on the Achievement Index (X_6)

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
30.64 and below	1	1.1	0	0	1	1.2
30.65-35.48	7	7.4	1	7.7	6	7.3
35.49-40.32	3	3.2	0	0	3	3.7
40.33-45.16	19	20.0	2	15.4	17	20.7
45.17-50.00	14	14.7	2	15.4	12	14.6
50.01-54.84	15	15.8	1	7.7	14	17.1
54.85-59.68	20	21.1	1	7.7	19	23.2
59.69-64.52	8	8.4	3	23.1	5	6.1
64.53-69.36	5	5.3	3	23.1	2	2.4
69.37 and above	3	3.2	0	0	3	3.7
Total	95	100.2	13	100.1	82	100.0
	Range= 28.77-74.66		Range= 33.90-68.02		Range= 28.77-74.66	
	$\bar{X}$= 50.67				$\bar{X}$= 50.05	
	S= 9.68				S= 9.36	

d. _____ I have quite a bit of self-confidence about my social ability, but I am not as self-confident about my intellectual ability

e. _____ I lack some self-confidence in both intellectual and social activities

Code

1 = I lack some self-confidence in both intellectual and social activities
2 = I have quite a bit of self-confidence about my social ability, but I am not as self-confident about my intellectual ability
3 = I have quite a bit of self-confidence about my intellectual ability, but I am not as self-confident about my social abilities
4 = I am quite confident of myself in most phases of activity
5 = I am very confident of myself in any phase of activity

The distribution of scores on the Self-confidence Index is presented in Table 11 (X_7).

Table 11. Distribution of scores on the Self-confidence Index (X_7)

Score Category	Total #	Total %	Farm #	Farm %	Service #	Service %	Other #	Other %
I lack some self-confidence in both intellectual and social activities	29	30.5	2	15.4			27	32.9
I have quite a bit of self-confidence about my social ability, but I am not as self-confident about my intellectual ability	5	5.3	1	7.7			4	4.9
I have quite a bit of self-confidence about my intellectual ability but I am not as self-confident about my social abilities	24	25.3	5	38.5			19	23.2
I am quite confident of myself in most phases of activity	37	38.9	5	38.5			32	39.0
I am very confident of myself in any phase of activity	0	0	0	0			0	0
Total	95	100.0	13	100.1			82	100.0
	Range= 1-4 $\bar{X}$= 2.726 S= 1.260		Range= 1-4				Range= 1-4 $\bar{X}$= 2.683 S= 1.287	

Personality system--manager's status-role orientation

Motivational orientation

Goals The statements included as measures of goal orientation were selected from among statements used by Hobbs (1963) to measure values and attitudes of farm managers. Minor changes in expression were made to make the items more applicable to the present study.

The managers were asked to respond to a series of statements in the questionnaires by indicating the strength of their agreement or disagreement with each statement. The instructions given to the respondents are presented in Appendix A.

The data obtained from the respondents included eleven categories of responses.[1] The scoring procedure followed the certainty method developed by Wolins and others (1965). Extreme responses were weighted more heavily in order to better discriminate responses at the two extreme ends. The scoring was done in such a way that agreement with a dimension was scored positively and disagreement with it was scored negatively. The possible range of each item is from 0 to 16. The scoring procedure, for a positive item, is summarized as follows:

Responses	D-5	D-4	D-3	D-2	D-1	A/D	A-1	A-2	A-3	A-4	A-5
Coded values	0	3	5	6	7	8	9	10	11	13	16

[1]The discussion of scoring procedures is based on Lee's presentation (Lee, 1969, pp. 138-139).

For a negative item, the code was reversed.

Among the statements in Hobbs' Economic Motivation Scale, some are specific statements related to profit maximization in management. Four items were included in the present study. They were:

1. The only real goal in managing is to maximize business profits.*
2. The greatest satisfaction in being a manager comes in running a highly profitable business.
3. In deciding about making changes in his business, a manager's first consideration should be "is it profitable."
4. The most successful manager is the one who makes the most profit for his business.*

The above items were randomly split into two sets by Motoko Lee (1969); the scores were then summed within each set to obtain two alternative indices. Items included in Profit Goal Orientation Index #1 are indicated with an asterisk. The remaining items composed Profit Goal Orientation Index #2. A high score indicates high goal orientation toward profit maximization. Scores on the first two indices were summed to yield a score on a general index (Profit Goal Orientation Index #3). The correlation of index #1 with index #2 is .5590, and they correlate .8810 and .8717 respectively with index #3.

The distributions of scores on these three indices are presented in Tables 12, 13, and 14.

Table 12. Distribution of scores on Profit Goal Orientation Index #1 (X_8)

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
2 and below	11	11.6	1	7.7	10	12.2
3-5	15	15.8	2	15.4	13	15.9
6-8	13	13.7	1	7.7	12	14.6
9-11	21	22.1	3	23.1	18	22.0
12-14	11	11.6	3	23.1	8	9.8
15-17	11	11.6	2	15.4	9	11.0
18-20	8	8.4	1	7.7	7	8.5
21 and above	5	5.3	0	0	5	6.1
Total	95	100.1	13	100.1	82	100.1
	Range= 00-23 $\bar{X}$= 0.853 S= 6.214		Range= 00-20		Range= 00-23 $\bar{X}$= 9.756 S= 6.303	

Table 13. Distribution of scores on Profit Goal Orientation Index #2 (X_9)

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
5 and below	5	5.3	1	7.7	4	4.9
6-9	3	3.2	0	0	3	3.7
10-13	5	5.3	0	0	5	6.1
14-17	21	22.1	2	15.4	19	23.2
18-21	30	31.6	5	38.5	25	30.5
22-25	15	15.8	2	15.4	13	15.9
26-29	11	11.6	3	23.1	8	9.8
30 and above	5	5.3	0	0	5	6.1
Total	95	100.2	13	100.1	82	100.2
	Range= 00-32 $\bar{X}$= 19.274 S= 6.618		Range= 00-29		Range= 00-32 $\bar{X}$= 19.171 S= 6.524	

Table 14. Distribution of scores on Profit Goal Orientation Index #3 (X_{10})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
2 and below	2	2.1	1	7.7	1	1.2
3-8	4	4.2	0	0	4	4.9
9-14	3	3.2	0	0	3	3.7
15-20	11	11.6	0	0	11	13.4
21-26	15	15.8	2	15.4	13	15.9
27-32	26	27.4	4	30.8	22	26.8
33-38	15	15.8	4	30.8	11	13.4
39-44	11	11.6	1	7.7	10	12.2
45-50	5	5.3	1	7.7	4	4.9
51 and above	3	3.2	0	0	3	3.7
Total	95	100.2	13	100.1	82	100.1
	Range= 00-55 $\bar{X}$= 29.126 S= 11.303		Range= 00-46		Range= 00-55 $\bar{X}$= 28.927 S= 11.361	

Attitudes toward system objects

Social objects--manager's self attitude (X_{11})

A manager's attitude toward himself as a manager was assessed with the following bio-data question:

How would you rank yourself as a manager?

a. _____ in the top 5%
b. _____ in the upper 20%
c. _____ in the upper 50%
d. _____ in the lower 50%
e. _____ I don't know

Code
1 = in the top 5%
2 = in the upper 20%
3 = I don't know
4 = in the upper 50%
5 = in the lower 50%

The distribution of scores on the Managerial Rank Index is presented in Table 15.

Table 15. Distribution of scores on the Managerial Rank Index (X_{11})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
in the top 5%	3	3.2	1	7.7	2	2.4
in the upper 20%	32	33.7	2	15.4	30	36.6
I don't know	11	11.6	0	0	11	13.4
in the upper 50%	46	48.4	10	76.9	36	43.9
in the lower 50%	3	3.2	0	0	3	3.7
Total	95	100.1	13	100.0	82	100.0
	Range= 1-5 $\bar{X}$= 3.147 S= 1.026		Range= 1-4		Range= 1-5 $\bar{X}$= 3.098 S= 1.019	

Social objects - attitude toward employees

A number of statements referring to employee management procedures were written. These statements were based largely on research reviewed and summarized by Likert (1961).

The managers were asked to respond to these statements, and indicate how certain they were of their response. The following instructions were given to the respondents by the interviewer:

> The next set of statements regards employee practices about which managers have varying opinions. We would like to have your opinions about these statements. Using the categories on CARD 8, please indicate

simply whether you agree with the statement or whether you disagree with it. After you have made this decision, please indicate how certain you are about this choice by choosing one of the numbers from 1 to 5. Number one (1) indicates you are only slightly certain while number five (5) indicates you are very certain. Numbers 2, 3, or 4 may better describe your position. When this is the case just indicate the appropriate number.

In this series of statements think of each statement as preceded by the phrase "Employee production can be increased by..." .

*[Interviewer: Read each statement to the respondent. Ask him if he agrees or disagrees with the statement and then have him give you a number to indicate the intensity of his feelings. Encircle the appropriate code. If the respondent refuses to answer or will not give an opinion, encircle both "A" and "D". Remind respondent occasionally of the lead in to the statement.]

The following response format was presented to the respondents on a card:

A					
	1	2	3	4	5
D					

Three employee attitude scales were developed from these items. The procedures employed are discussed below.

Wolins and Cranny, cited by Warland (1966), have suggested three conditions which are necessary and operationally definable to add items legitimately. These criteria can be used to evaluate the final scale items (questions) in terms of additivity, unidimensionality, and reliability. The criteria include the following:

1. The relationships among the responses to the different stimuli (items) must be linear.

2. The variance of the response to different stimuli must be homogeneous and independent of the means.

3. The intercorrelations among the stimuli must be positive and homogeneous.

Although no set of operations is available to evaluate all these criteria in any absolute sense, the characteristics of the scales can be summarized and compared in a relative sense.

The first condition for additivity will be evaluated on the basis of:

(1) a comparison between the minimum acceptable item-total correlation coefficient (r_{it}) and the field sample r_{it}'s of the scale,

(2) the magnitude of the coefficient of reliability (r_{tt}),

(3) the magnitude of the average intercorrelation coefficient ($\bar{r}_{ij}$), and

(4) the magnitude of a majority of the intercorrelations among the items of each scale.

The minimum item total correlation necessary for including an item in a scale is defined as $r_{it} = 1/\sqrt{n}$ where n is the number of items in the given dimension. The minimum item-total correlation coefficient (r_{it}) may serve as a quasi significance test of linearity. This coefficient defines the amount of independent variance of the total score contributed by each item if there were no experimental relationship,

i.e., the amount of variance which is contributed only by chance (Warland, 1966).

The coefficient of reliability is defined as

$$r_{tt} = \frac{n(\bar{r})}{1 + (n-1)(\bar{r})}$$

where n = the number of items and $\bar{r}$ is the average inter-correlation among the items. Items that met the criterion of a minimum item-total correlation were added to the scale as long as they increased the coefficient of reliability.

With regard to the second criterion, Warland (1966) pointed out that the data concerning the relationship between the item means and item standard deviations can not be very meaningfully evaluated when the number of items of the scale is small. With only a few items, there is not enough data to determine accurately the nature of the relationship between the item means and item standard deviations. Since all the scales discussed here have fewer than ten items, this evaluation was not undertaken.

The third criterion of positive and homogeneous inter-correlations was essentially satisfied in all cases.

The same approach to scoring used with the goal orientation items was employed, and is briefly summarized again below:

Responses	D-5	D-4	D-3	D-2	D-1	A/D	A-1	A-2	A-3	A-4	A-5
Coded Values	0	3	5	6	7	8	9	10	11	13	16

The above coding procedure was followed for positive items; for negative items the code was reversed.

On the basis of their intercorrelations, items from the original set were combined into three scales. Two of these, indicating a positive and a negative attitude toward employees, were mutually exclusive. A third scale was developed containing many items from both scales.

Positive attitude toward employees (X_{12})

A list of the items used in building this scale is presented in Appendix B. Data relevant to this scale (Employee Attitude Scale #1) appear in Table 16. The distribution of scores on Employee Attitude Scale #1 is presented in Table 17.

Negative attitude toward employees (X_{13})

A list of the items used in building this scale is presented in Appendix B. Data relevant to the negative attitude toward employees scale (Employee Attitude Scale #2) are presented in Table 18.

The distribution of scores on Employee Attitude Scale #2 is presented in Table 19.

Table 16. Employee Attitude Scale #1 item intercorrelations and item-total correlations [a,b]

Item No.	1	2	3	4	5	6	Total[c]
1	-	.4278	.0683	.3190	.1685	.3077	.5532
2		-	.3559	.3387	.3671	.4376	.7005
3			-	.3878	.4199	.4695	.6802
4				-	.2515	.3693	.6422
5					-	.4461	.7005
6						-	.7426

[a]Reliability coefficient = r_{tt} = .7574.

[b]The above table includes only the significant items which have been used in the final analysis.

[c]Greater than the minimum acceptable item total correlation coefficient r_{it}.

Table 17. Distribution of scores on Employee Attitude Scale #1 (X_{12})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
62 and below	4	4.2	1	7.7	3	3.7
63-67	2	2.1	0	0	2	2.4
68-72	9	9.5	0	0	9	11.0
73-77	17	17.9	0	0	17	20.7
78-82	18	18.9	2	15.4	16	19.5
83-87	19	20.0	4	30.8	15	18.3
88-92	9	9.5	2	15.4	7	8.5
93 and above	17	17.9	4	30.8	13	15.9
Total	95	100.0	13	100.1	82	100.0
	Range= 58-96 $\bar{X}$= 81.947 S= 9.315		Range= 62-96		Range= 58-96 $\bar{X}$= 81.219 S= 9.187	

Table 18. Employee Attitude Scale #2 item intercorrelations and item-total correlations[a,b]

Item number	1	2	3	4	Total[c]
1	-	.3749	.4864	.3639	.7147
2		-	.3063	.4995	.7453
3			-	.4230	.7243
4				-	.7954

[a]Reliability coefficient = r_{tt} = .7346.

[b]The above able includes only the significant items which have been used in the final analysis.

[c]Greater than the minimum acceptable item total correlation coefficient r_{it}.

Table 19. Distribution of scores on Employee Attitude Scale #2 (X_{13})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
30 and below	2	2.1	0	0	2	2.4
31-34	0	0	0	0	0	0
35-38	3	3.2	0	0	3	3.7
39-42	3	3.2	1	7.7	2	2.4
43-46	3	3.2	0	0	3	3.7
47-50	10	10.5	2	15.4	8	9.8
51-54	24	25.3	1	7.7	23	28.0
55-58	16	16.8	4	30.8	12	14.6
59-62	17	17.9	2	15.4	15	18.3
63 and above	17	17.9	3	23.1	14	17.1
Total	95	100.1	13	100.1	82	100.0
	Range= 9-64 $\bar{X}$= 54.600 S= 8.813		Range= 40-64		Range= 9-64 $\bar{X}$= 54.354 S= 9.060	

General attitude toward employees (X_{14})

A list of the items used in building this composite scale is presented in Appendix B. Data relevant to the general attitude toward employees scale (Employee Attitude Scale #3) are presented in Table 20. The distribution of scores on Employee Attitude Scale #3 is presented in Table 21.

Scale #1 and Scale #2 intercorrelate .3981, and correlate .8286 and .7762 respectively, with Scale #3.

Table 20. Employee Attitude Scale #3 item intercorrelations and item-total correlations[a,b]

Item No.	1	2	3	4	5	6	7	8	Total[c]
1	-	.3559	.3387	.3671	.4376	.2838	.2560	.2685	.6066
2		-	.3878	.4199	.4695	.3195	.2638	.2967	.6793
3			-	.2515	.3693	.2511	.0273	.2893	.5323
4				-	.4461	.2815	.3539	.1924	.6518
5					-	.1663	.1704	.1817	.5874
6						-	.3063	.4995	.6648
7							-	.4230	.5948
8								-	.6840

[a]Reliability coefficient = r_{tt} = .8000.

[b]The above table includes only the significant items which have been used in the final analysis.

[c]Greater than the minimum acceptable item total correlation coefficient r_{it}.

Table 21. Distribution of scores on Employee Attitude Scale #3 (X_{14})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
66 and below	1	1.1	0	0	1	1.2
67-73	0	0	0	0	0	0
74-80	2	2.1	0	0	2	2.4
81-87	6	6.3	1	7.7	5	6.1
88-94	5	5.3	0	0	5	6.1
95-101	10	10.5	0	0	10	12.2
102-108	27	28.4	4	30.8	23	28.0
109-115	14	14.7	1	7.7	13	15.9
116-122	17	17.9	5	38.5	12	14.6
123 and above	13	13.7	2	15.4	11	13.4
Total	95	100.0	13	100.1	82	99.9
	Range= 66-128 $\bar{X}$= 107.926 S= 13.278		Range= 82-128		Range= 66-128 $\bar{X}$= 107.073 S= 13.289	

Cultural objects--managerial role

Power (X_{15}) Manager's perceptions of the power associated with the managerial role was assessed with a single attitude question:

> Good management is the most important factor in making a business successful.

This attitude item was part of a group of items presented to the respondents in the questionnaires. The introductory statements preceding these items and the scoring procedures are presented in Appendix A.

The distribution of scores on the Perceived Power Index is presented in Table 22.

Table 22. Distribution of scores on the Perceived Power Index (X_{15})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
6 and below	2	2.1	0	0	2	2.4
7-8	2	2.1	0	0	2	2.4
9-10	8	8.4	2	15.4	6	7.3
11-12	11	11.6	1	7.7	10	12.2
13-14	26	27.4	4	30.8	22	26.8
15 and above	46	48.4	6	46.2	40	48.8
Total	94	100.0	13	100.1	82	99.9
	Range= 5-16 $\bar{X}$= 13.632 S= 2.761		Range= 9-16		Range= 5-16 $\bar{X}$= 13.622 S= 2.792	

Management information (X_{16}) The manager's perception of the importance of new management information was measured with the following question:

> How important do you think it is for a dealer to keep up with the latest management practices? Select a number from one to five to indicate its importance.

The managers then selected a number indicating a position on a line similar to the one shown below:

1	2	3	4	5
Not Important				Extremely Important

The actual number selected was used to represent a respondent's score on this variable.

The distribution of scores on the Management Information Index is presented in Table 23.

Table 23. Distribution of scores on the Management Information Index (X_{16})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
1 = not important	0	0	0	0	0	0
2	0	0	0	0	0	0
3	4	4.2	0	0	4	4.9
4	30	31.6	2	15.4	28	34.1
5=extremely important	61	64.2	11	84.6	50	61.0
Total	95	100.0	13	100.0	82	100.0
	Range= 3-5 $\bar{X}$= 4.600 S= .569		Range= 4-5		Range= 3-5 $\bar{X}$= 4.561 S= .586	

Job satisfaction The job satisfaction scale was developed by following the methods and procedures outlined in preceding parts of this chapter.

The respondents were asked a number of questions regarding their job satisfaction. They were preceded in the interview schedule by the following introductory statements.

> We would now like to talk with you about your satisfaction with various aspects of your position. For each aspect of your job that I read to you, indicate whether you are Satisfied or Dissatisfied. Then indicate how strongly satisfied or dissatisfied you are by giving me a number from 1 to 5. Number 5 indicates a very great degree of satisfaction or dissatisfaction while number 1 indicates very slight amounts of satisfaction or dissatisfaction.

The respondents were given a card containing the following information which they could look at while the above information and the job satisfaction questions were being read to them.

Slight					Strong
S					
	1	2	3	4	5
D					

The following scores were assigned to responses:

Code		
	00 = Dissatisfied	5
	03 = Dissatisfied	4
	05 = Dissatisfied	3
	06 = Dissatisfied	2
	07 = Dissatisfied	1
	08 = No opinion	
	09 = Satisfied	1
	10 = Satisfied	2
	11 = Satisfied	3
	13 = Satisfied	4
	16 = Satisfied	5

A list of the job satisfaction items used in building this scale is presented in Appendix C. The scale and its development are discussed by Sabri (1969).

Data relevant to the Job Satisfaction Scale are given in Table 24. The distribution of scores on this scale is presented in Table 25.

Table 24. Job Satisfaction Scale item intercorrelations and item-total correlations[a,b]

Item No.	1	2	3	4	5	6	7	8	Total[c]
1	-	.3740	.0659	.2709	.2252	.1977	.3237	.6171	.4311
2		-	.2693	.4371	.2150	.4448	.3377	.3367	.4120
3			-	.2356	.1536	.4216	.2550	.0528	.4051
4				-	.0357	.4019	.3582	.2801	.3304
5					-	.2574	.2468	.3644	.4862
6						-	.3424	.3085	.4323
7							-	.4413	.5582
8								-	.4694

[a]Reliability coefficient = r_{tt} = .7612.

[b]The above table includes only the significant items which have been used in the final analysis.

[c]Greater than the minimum acceptable item total correlation coefficient r_{it}.

Two indices developed by Lee (1969) which contained most of the items in the Job Satisfaction Scale were also used. Scoring of items was identical to the procedure used with the Job Satisfaction Scale. The items (presented in Appendix C) were randomly partitioned into two sets. Within each set, the scores were totaled to obtain the second and third indices of job satisfaction. The intercorrelation of these two indices is .6401. Index #2 and index #3 correlate .8105 and .8597 respectively with the Job Satisfaction Scale (index #1). The distributions of scores on these two indices are presented in Tables 26 and 27.

Table 25. Distribution of scores on the Job Satisfaction Scale--Index #1 (X_{17})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
71 and below	1	1.1	0	0	1	1.2
72-77	2	2.1	2	12.4	0	0
78-83	5	5.3	0	0	5	6.1
84-89	7	7.4	0	0	7	8.5
90-95	17	17.9	2	15.4	15	18.3
96-101	20	21.1	1	7.7	19	23.2
102-107	12	12.6	2	15.4	10	12.2
108-113	11	11.6	1	7.7	10	12.2
114-119	11	11.6	1	7.7	10	12.2
120-125	8	8.4	4	30.8	4	4.9
126 and above	1	1.1	0	0	1	1.2
Total	95	100.2	13	100.1	82	100.0
	Range = 56-128 $\bar{X}$= 101.421 S= 13.184		Range= 74-125		Range= 56-128 $\bar{X}$= 100.841 S= 12.418	

Table 26. Distribution of scores on Job Satisfaction Index #2 (X_{18})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
44 and below	3	3.2	2	15.4	1	1.2
45-48	8	8.4	1	7.7	7	8.5
49-52	7	7.4	2	15.4	5	6.1
53-56	15	15.8	0	0	15	8.3
57-60	17	17.9	2	15.4	15	8.3
61-64	12	12.6	1	7.7	11	13.4
65-68	13	13.7	2	15.4	11	13.4

Table 26 (Continued)

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
69-72	12	12.6	0	0	12	14.6
75-76	3	3.2	1	7.7	2	2.4
77 and above	5	5.3	2	15.4	3	3.7
Total	95	100.1	13	100.1	82	99.9
	Range= 43-80 $\bar{X}$= 60.463 S= 8.754		Range= 44-77		Range= 43.80 $\bar{X}$= 60.537 S= 8.244	

Table 27. Distribution of scores on Job Satisfaction Index #3 (X_{19})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
55 and below	3	3.2	1	7.7	2	2.4
56-60	2	2.1	1	7.7	1	1.2
61-65	7	7.4	0	0	7	8.5
66-70	18	18.9	2	15.4	16	19.5
71-75	23	24.2	3	23.1	20	24.4
76-80	16	16.8	1	7.7	15	18.3
81-85	14	14.7	0	0	14	17.1
86-90	6	6.3	4	30.8	2	2.4
91 and above	6	6.3	1	7.7	5	6.1
Total	95	99.9	13	100.1	82	99.9
	Range= 42-96 $\bar{X}$= 75.094 S= 9.417		Range= 54-91		Range= 42-96 $\bar{X}$= 74.927 S= 9.056	

Attitudes toward environmental objects--competition (X_{20}) Respondents' attitude toward the competitive situation was assessed with a single question. The question below

was preceeded in the schedule by two other questions about the competitive situation. The respondents were presented with a card containing the following information:

1	2	3	4	5	6	7	8	9	10	11
Not restrictive at all										Very restrictive

They were then asked:

> How restrictive is this competitive situation on your ability to be a successful manager? Select a number from the categories that best describes your feeling.

The actual number selected was used as each respondent's score on the variable. The distribution of scores on the Attitude Toward Competitive Situation Index is presented in Table 28.

Cognitive orientation--product knowledge (X_{21})

Chemical knowledge To determine the managers' chemical knowledge they were presented with a series of statements about agricultural chemicals preceded by the following introductory statement:

> Now I'm going to read to you a series of statements regarding agricultural chemicals. We would like your opinion about these statements.

While the statements were being read, the respondents were able to look at a card with the following information:

A					
	1	2	3	4	5
D					

Table 28. Distribution of scores on the Attitude Toward Competitive Situation Index (X_{20})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
1 Not restrictive	5	5.3	0	0	5	6.1
2	0	0	0	0	0	0
3	19	20.0	3	23.1	16	19.5
4	16	16.8	5	38.5	11	13.4
5	10	10.5	1	7.7	9	11.0
6	11	11.6	1	7.7	10	12.2
7	10	10.5	2	15.4	8	9.8
8	16	16.8	1	7.7	15	18.3
9	5	5.3	0	0	5	6.1
10	3	3.2	0	0	3	3.7
11 Very restrictive	0	0	0	0	0	0
Total	95	100.0	13	100.1	82	100.1
	Range= 1-10 $\bar{X}$= 5.421 S= 2.306		Range= 3-8		Range= 1-10 $\bar{X}$= 5.524 S= 2.380	

Each respondent was asked to indicate whether he agreed, disagreed, or had no opinion about the statements. The statements and their correct answers are presented in Appendix D.

The following code was used to assign numbers to the managers' responses:

Code 0 = incorrect answer
1 = no opinion
2 = correct answer

Manager's total scores for chemical knowledge were computed by summing the numbers assigned to item responses.

Fertilizer knowledge To determine the managers' fertilizer knowledge, statements referring to fertilizer were presented to the managers. The statements were preceded by the following remarks:

> Next we would like to ask you some questions concerning fertilizer and its application... For each question select the answer that in your opinion best answers the question.

A card with the statements and item responses was presented to the respondents at this time. A manager's total number of correct answers constituted his fertilizer knowledge score. The statements and their correct answers are presented in Appendix D.

The Product Knowledge Index was computed by summing chemical and fertilizer knowledge scores.

The distribution of scores on the Product Knowledge Index is presented in Table 29.

Cognitive orientation--economic knowledge Several questions were asked in the areas of business finance and margin determination. Answers to open-end questions were put into categories and the categories were assigned weights.

Table 29. Distribution of scores on the Product Knowledge Index (X_{21})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
2 and below	1	1.1	0	0	1	1.2
3-4	9	9.5	0	0	9	11.0
5-6	26	27.4	2	15.4	24	29.3
7-8	25	26.3	1	7.7	24	29.3
9-10	18	18.9	4	30.8	14	17.1
11-12	14	14.7	5	38.5	9	11.0
13 and above	2	2.1	1	7.7	1	1.2
Total	95	100.0	13	100.1	82	100.1
	Range= 2-13 $\bar{X}$= 7.526 S= 2.583		Range= 6-13		Range= 2-13 $\bar{X}$= 7.159 S= 2.447	

These questions were then randomly divided into two groups to provide Economic Knowledge Indices 1 and 2.

The respondents were given a card containing a simulated balance sheet and income statement[1] and were asked the following questions that were included in Economic Knowledge Index #1 (X_{22}):

> Will you please give me an interpretation of the status of this business as represented on these financial sheets?
>
> Code 1 = Good, doing well (no qualification offered)
> 2 = Doing well but...(some qualification offered)
> 3 = Business is OK because net savings is good

[1]Presented in Appendix E.

4 = Liabilities are too high, otherwise the business is average
5 = Not too good because assets equal liabilities
6 = The assets to liabilities ratio is not good. Member's equity should be higher. Other income, cash-on-hand, and sales costs are too high.

What additional information do you need to take full advantage of these statements?

Code
1 = no other information needed
2 = breakdown of aging accounts receivable and other income
3 = need a better breakdown of expenses, assets, liabilities, and age of accounts receivable
4 = need a complete detailed breakdown of assets, liabilities, and operating expenses giving a comprehensive picture of the whole business; also the age of accounts receivable and a detailed listing of other income

When pricing products and services several factors must be taken into account. Under certain conditions it may be wise to maintain a wide margin even at the sacrifice of sales volume while in other instances it would be better to maintain a smaller margin to get increased sales volume.

For each situation, please state whether you would maintain a large margin with the possibility of decreasing the volume, or maintain a small margin with the possibility of increasing the volume.

[Encircle One]

(L)	S	1.	Brand handled recognized by customers as superior to that of competitors
L	(S)	2.	Extra services wanted by customers cannot be (or are not) provided
L	(S)	3.	Many other dealers in the trade area have full competitive lines
(L)	S	4.	An aggressive sales and merchandising program is maintained
L	(S)	5.	Many expenses are fixed so that total per unit handling costs decrease sharply as volume increases

(L) S 6. Increased sales of this line have little value for increasing sales of other lines handled

Code — Total number of correct answers to parts 3, 5, and 6 (correct answers are circled)

The distribution of scores on Economic Knowledge Index #1 is presented in Table 30.

Table 30. Distribution of scores on Economic Knowledge Index #1 (X_{22})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
3	1	1.1	0	0	1	1.2
4	1	1.1	0	0	1	1.2
5	5	5.3	1	7.7	4	4.9
6	5	5.3	1	7.7	4	4.9
7	9	9.5	1	7.7	8	9.8
8	11	11.6	1	7.7	10	12.2
9	11	11.6	0	0	11	13.4
10	10	10.5	1	7.7	9	11.0
11	18	18.9	2	15.4	16	19.5
12	12	12.6	3	23.1	9	11.0
13	12	12.6	3	23.1	9	11.0
Total	95	100.1	82	100.1	13	100.1
	Range= 3-13 $\bar{X}$= 9.558 S= 2.457		Range= 5-13		Range= 3-13 $\bar{X}$= 9.451 S= 2.400	

Economic knowledge index #2 (X_{23}) was composed of the following questions: How precise are these financial statements?[1]

Code
1 = precise, accurate, and enough information is presented
2 = precise if certified by audit
3 = perhaps precise but not enough information
4 = not precise, and not enough information

What do you feel are the main purposes of financial statements?

Code
1 = for tax purposes only
2 = to show the manager, stockholders, the Directors, and bank(s) the present financial position of the business
3 = as a guide for planning inventory
4 = as a yardstick (i.e., the making of comparisons) and as a guide for the future
5 = to determine profitability by departments, check on overhead costs, and to help plan future inventory (as compared to experience)
6 = as a comparative tool to help in planning the budget, stocking of inventory, indicator of farming trends, and as a guide in making changes (corrections) in our business

When pricing products and services several factors must be taken into account. Under certain conditions it may be wise to maintain a wide margin even at the sacrifice of sales volume while in other instances it would be better to maintain a smaller margin to get increased sales volume.

For each situation, please state whether you would maintain a large margin with the possibility of decreasing the volume, or maintain a small margin with the possibility of increasing the volume.

[Encircle One]

(L) S 1. Brand handled recognized by customers as superior to that of competitors

---

[1]This question and the following one were again asked with reference to the card with the sample balance sheet and income statement which was shown to the respondents and is presented in Appendix E.

L (S) 2. Extra services wanted by customers cannot be (or are not) provided
L (S) 3. Many other dealers in the trade area have full competitive lines
(L) S 4. An aggressive sales and merchandising program is maintained
L (S) 5. Many expenses are fixed so that total per unit handling costs decrease sharply as volume increases
(L) S 6. Increased sales of this line have little value for increasing sales of other lines handled

Code — Total number of correct answers to parts 1, 2, and 4 (correct answers are circled)

The distribution of scores on Economic Knowledge Index #2 is presented in Table 31.

Table 31. Distribution of scores on Economic Knowledge Index #2 (X_{23})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
3	1	1.1	0	0	1	1.2
4	3	3.2	0	0	3	3.7
5	6	6.3	0	0	6	7.3
6	13	13.7	2	15.4	11	13.4
7	15	15.8	2	15.4	13	15.9
8	13	13.7	1	7.7	12	14.6
9	13	13.7	2	15.4	11	13.4
10	11	11.6	0	0	11	13.4
11	12	12.6	3	23.1	9	11.0
12	7	7.4	3	23.1	4	4.9
13	1	1.1	0	0	1	1.2
	95	100.2	82	100.0	13	100.1
	Range= 3-13		Range= 6-12		Range= 3-13	
	$\bar{X}$= 8.295				$\bar{X}$= 8.134	
	S= 2.266				S= 2.299	

Economic Knowledge Index #3 (X_{24}) was computed by summing scores on the first two economic knowledge indices. The distribution of scores on this index is presented in Table 32.

Index #1 and Index #2 intercorrelate .4507, and correlate .8645 and .8348 respectively with Index #3.

Table 32. Distribution of scores on Economic Knowledge Index #3 (X_{24})

Score Category	Total		Farm Service		Other	
	#	%	#	%	#	%
8-9	3	3.2	0	0	3	3.7
10-11	3	3.2	0	0	3	3.7
12-13	13	13.7	2	15.4	11	13.4
14-15	7	7.4	1	7.7	6	7.3
16-17	12	12.6	1	7.7	11	13.4
18-19	23	24.2	1	7.7	22	26.8
20-21	15	15.8	2	15.4	13	15.9
22-23	14	14.7	4	30.8	10	12.2
24-25	5	5.3	2	15.4	3	3.7
Total	95	100.1	13	100.1	82	100.1
	Range= 8-25 $\bar{X}$= 17.852 S= 4.074		Range= 13-25		Range= 8-25 $\bar{X}$= 17.585 S= 3.945	

Value orientation The statements included as the measures of rational value orientation toward economic ends were selected from statements on five scales used by Hobbs (1963) to measure values and attitudes of farm managers.

Necessary minor changes in expression were made.

Not all the items used by Hobbs were included in this study. Thus, items used in this thesis as the measures of rational value orientation to economic ends consist of only parts of Hobbs' scales. The construction of the scales and evaluation of internal consistency of the scales were discussed by Hobbs and others (Hobbs, et al., 1964, pp. 83-87).

Instructions preceding the items and scoring procedures are the same as those presented in the discussion of goal orientation and are given in Appendix A. The items were randomly split into two sets. The scores were totaled for the items in each set (see Appendix F for the list of items partitioned into the two sets), and the total scores of each became the first and the second indices of rational value orientation. A high score indicates relatively strong rational value orientation toward economic ends. The scores on these two indices were then summed to yield the third index. The distributions of scores on these three indices are presented in Tables 33-35.

Index #1 and Index #2 intercorrelate .3886, and correlate .8010 and .8628 respectively, with Index #3.

Performance--extra-system

Three indices or organizational participation were developed. Organizational Participation Index #1 (X_{28}) was composed of scores on the following question:

Table 33. Distribution of scores on Rational Value Orientation Index #1 (X_{25})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
103 and below	3	3.2	0	0	3	3.7
104-112	4	4.2	1	7.7	3	3.7
113-121	11	11.6	1	7.7	10	12.2
122-130	13	13.7	0	0	13	15.9
131-139	22	22.1	5	38.5	16	19.5
140-148	22	23.2	3	23.1	19	23.2
149-157	10	10.5	2	15.4	8	9.8
158-166	7	7.4	1	7.7	6	7.3
167 and above	4	4.2	0	0	4	4.9
Total	95	100.1	13	100.1	82	100.2
	Range= 78-172 $\bar{X}$= 136.811 S= 17.385		Range= 107-166		Range= 78-178 $\bar{X}$= 136.390 S = 17.647	

Table 34. Distribution of scores on Rational Value Orientation Index #2 (X_{26})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
70 and Below	2	2.1	0	0	2	2.4
71-80	0	0	0	0	0	0
81-90	5	5.3	0	0	5	6.1
91-100	4	4.2	0	0	4	4.9
101-110	18	18.9	3	23.1	15	18.3
111-120	19	20.0	2	15.4	17	20.7
121-130	18	18.9	3	23.1	15	18.3
131-140	12	12.6	2	15.4	10	12.2
141-150	9	9.5	2	15.4	7	8.5

Table 34 (Continued)

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
151-160	5	5.3	1	7.7	4	4.9
161 and up	3	3.2	0	0	3	3.7
Total	95	100.0	13	100.1	82	100.0
	Range= 58-168 $\bar{X}$= 121.274 S= 20.577		Range= 105-157		Range= 58-168 $\bar{X}$= 120.451 S= 21.213	

Table 35. Distribution of scores on Rational Value Orientation Index #3 (X_{27})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
183 and below	2	2.1	0	0	2	2.4
184-198	1	1.1	0	0	1	1.2
199-213	2	2.1	0	0	2	2.4
214-228	11	11.6	2	15.4	9	11.0
229-243	12	12.6	0	0	12	14.6
244-258	21	22.1	2	15.4	19	23.2
259-273	20	21.1	4	30.8	16	19.5
274-288	7	7.4	0	0	7	8.5
289-303	12	12.6	4	30.8	8	9.8
304-318	4	4.2	0	0	4	4.9
319 and above	3	3.2	1	7.7	2	2.4
Total	95	100.1	13	100.1	82	99.9
	Range= 154-325 $\bar{X}$= 258.084 S= 31.674		Range= 222-323		Range= 154-325 $\bar{X}$= 256.841 S= 32.08	

To how many community organizations do you belong? The respondents' scores consisted of the actual number of organizations given. The distribution of scores on this index is presented in Table 36.

Table 36. Distribution of scores on Organizational Participation Index #1 (X_{28})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
0	4	4.2	0	0	4	4.9
1	3	3.2	0	0	3	3.7
2	19	20.0	0	0	19	23.2
3	28	29.5	2	15.4	26	31.7
4	15	15.8	3	23.1	12	14.6
5	18	18.9	6	16.2	12	14.6
6	4	4.2	1	7.7	3	3.7
7	3	3.2	1	7.7	2	2.4
8	1	1.1	0	0	1	1.2
Total	95	100.1	13	100.1	82	100.0
	Range= 0-8 $\bar{X}$= 3.453 S= 1.601		Range= 3-7		Range= 0-8 $\bar{X}$= 3.256 S= 1.584	

Organizational Participation Index #2 assessed the number of different types of organizations participated in. Respondents were asked the following question:

In which three (3) are you most active?

Responses to this question were coded into the following nine types of organizations:

1. Church
2. Fraternal: Elk, Moose, Masonic Lodge, Eastern Star, Knights of Columbus
3. Service: Lions, Rotary, Fair Board, J.C., Fireman's Club and/or Volunteer Fire Department, Kiwanis, Coliseum Board, Community Club, Toast Master's Club, Civil Defense
4. Recreational, social and sports: social club, country club, Izaak Walton League, Bowling League, Summer Athletic program, Gun Club, Sportsman Club, Saddle Club
5. Economic: Chamber of Commerce, Businessman's Club, Farm Bureau, Commercial Club, Crop and Feeder's Organization, Industrial Development Corporation
6. Veterans: V.F.W., American Legion, American Veterans
7. Youth Service: 4-H, Little League Ball System, Cub and Boy Scouts
8. Local School: Athletic Boosters' Club, P.T.A., School Board
9. Governmental Service: Town Council, Town Clerk

The score on this index was the number of different types of organizations to which the manager belonged (with a maximum of 3 possible). The distribution of scores is presented in Table 37.

Organizational Participation Index #3 (X_{30}) was formed by summing scores on the first two indices and adding scores on the following question:

> Using the categories on CARD 5, how frequently do you participate in the activities of the organizations in this community?
>
> a. often[1]
> b. sometimes

[1]Respondents were presented with a card containing these four categories.

Table 37. Distribution of scores on Organizational Participation Index #2 (X_{29})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
0	5	5.3	0	0	5	6.1
1	8	8.4	0	0	8	9.8
2	26	27.4	2	15.4	24	29.3
3	56	58.9	11	84.6	45	54.9
Total	95	100.0	13	100.0	82	100.1
	Range= 0-3 X= 2.400 S= .851		Range= 2-3		Range= 0.3 X= 2.330 S= .884	

c. rarely
d. never

Code
1 = never
2 = rarely
3 = sometimes
4 = often

The distribution of scores is presented in Table 38. Indices #1 and #2 intercorrelate .5161, and correlate .9133 and .7541 respectively with Index #3.

Role performance

Due to the nature of the method employed in data collection, role performance was operationalized by verbal responses to a series of questions which are assumed to reflect actual performance.

Many of the questions were selected from past schedules

Table 38. Distribution of scores on Organizational Participation Index #3 (X_{30})

Score Category	Total		Farm Service		Other	
2-3	2	2.1	0	0	2	2.4
4-5	5	5.3	0	0	5	6.1
6-7	12	12.6	0	0	12	14.6
8-9	24	25.3	2	15.4	22	26.8
10-11	34	35.8	7	53.8	27	32.9
12-13	17	17.9	4	30.8	13	15.9
14-15	1	1.1	0	0	1	1.2
Total	95	100.1	13	100.0	82	99.9
	Range= 2-15 $\bar{X}$= 9.358 S= 2.401		Range= 8-13		Range= 2-15 $\bar{X}$= 9.110 S= 2.435	

used in management studies by the research team and modifed to apply to this study. Other questions were developed especially for this study after an extensive review of management literature. The majority of the questions were selected in an effort to operationalize various aspects of the general functions and operational areas discussed in the theory chapter.

Sample size and time limitations made it infeasible for investigators to check verbal responses against actual performance. Verbal responses were assumed to be indicators of actual performance of tasks. An attempt was made to obtain accurate verbal responses by using standard interviewing

techniques and by legitimation obtained for the study through the cooperation of regional cooperatives and the executive secretary of the Iowa Institute of Cooperation. An introductory letter explaining the purposes of the study and introducing the interviewers was mailed to each manager in the sample. At the time of the interview, the importance of obtaining accurate data was emphasized.

Three indices of role performance were developed. The first two indices were composed of items selected by a panel of judges. The third index was composed of items loading significantly on the first unrotated factor of a principal components factor analysis of performance items.

The first two indices of managerial performance[1] were developed as follows: Knowledge of the five general functions of management was used in selecting items. A panel of judges[2] was used in categorizing performance items in the field schedule into the five functional categories. Another panel of judges[2] was used to select the most relevant items for each function.

The transformation of the raw data into a form acceptable for statistical analysis was done using the "certainty method"

---

[1]The first two indices were developed by Lee and are discussed in more detail in her dissertation (Lee, 1969).

[2]Judges were specialists at Iowa State University.

(Warren et al., 1967) which involved a third panel of judges. For each of the 95 responses to each item judges were asked to indicate the degree to which they felt an answer was indicative of adequate performance.

The instructions given to each judge were as follows:

> On the following pages are the responses made by general managers of Iowa Farmer Cooperatives to the question: 'What are the major factors you take into consideration in deciding (or in making recommendations to your board) to add or to drop existing lines of business or reorganizing your business to place greater emphasis on a given line?'
>
> It is assumed that you have or will formulate a standard of managerial performance which would enable you to differentiate adequate performance from inadequate performance. The adequacy of performance is to be considered in terms of its leading to successful decision making regarding adding, dropping, or reorganizing existing lines of the business. Read the response of each manager and form a judgment as to whether his methods and techniques (his performance) in this area are adequate or inadequate. Compare your judgment for each general manager with your standard. If you believe that the response given by the manager indicates his procedures most certainly would lead to highly adequate performance of the function indicated by the question, place a 99 by the individual's response. On the other hand, if you believe that the response given by the manager indicates his procedures most certainly would lead to highly inadequate performance of the function indicated, place a 1 by the individual's response. The continuum with which you are working is one of certainty. The more certain you are that a response indicates a manager's procedures are on the adequate performance side of the midpoint (50), the greater the number you assign to the response. The more certain you are a response indicates a manager's procedures are on the inadequate performance side of the midpoint, the smaller the number you assign to the response. A score of 50 indicates you cannot decide. Feel free to use any number from 1 to 99 that best expresses your belief.

Responses to each question were presented to the judges in a random manner. After responses were scored by judges, they were transformed to the scores in the standard normal distribution (Z). The possible range of Z scores is from -2.326 to 2.326, 99 was coded as 2.326, 50 as 0.000, and 01 as -2.326 (Cranny, 1965). A higher score indicates relatively more adequate performance. The transformation of the raw scores to the Z scores was accomplished by using Edwards' "Table of normal deviates Z corresponding to proportions p of a dichtomized unit normal distribution" (Edwards, 1959b, p. 246).

The Z scores were then averaged. This average Z score was then entered as the coded value for all items scored by the certainty method.

This approach to handling open-end responses is called the certainty method of scoring. Himes gave the following defense of this approach:

> It was felt that simple open-end questions would permit the respondent freedom in his response and give him a chance to express his competence in the area. Certainty scoring seems quite well suited to the task of transforming the responses to continuum of performance. The judges, who at this point become the definers of the normative expectations placed on the manager's role, are able to consider the whole answer and more completely make a judgment as to the level of performance (Himes, 1967, p. 123).

Lee assumed that organizing, controlling, coordinating and directing were to be weighted equally and planned to be

weighted, somewhat arbitrarily, twice as much. Eight items were selected for planning, and four items were selected for each of the remaining four general functions--organizing, controlling, coordinating and directing.

Standardized scores were obtained by dividing Z scores by standard deviations (Edwards, 1963). The selected items were randomly partitioned into two sets within each function. The first set constituted Role Performance Index #1; the second set constituted Role Performance Index #2. The items composing these indices and scoring procedures are presented in Appendix G.

The distribution of scores for Role Performance Indices #1 (X_{31}) and #2 (X_{32}) are presented in Tables 39 and 40.

Table 39. Distribution of scores on Role Performance Index #1 (X_{31})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
-8.001 and below	3	3.2	0	0	3	3.7
-8.000- -1.802	6	6.3	0	0	6	7.3
-1.801-4.397	34	35.8	2	15.4	32	39.0
4.398-10.496	36	37.9	5	38.5	31	37.8
10.497-16.695	13	13.7	6	46.2	7	8.5
16.696-22.894	2	2.1	0	0	2	2.4
22.895 and above	1	1.1	0	0	1	1.2
Total	95	100.1	13	100.1	82	99.9
	Range=-9.923--25.465		Range= 2.281-13.702		Range= -9.923--25.465	
	$\bar{X}$= 4.756				$\bar{X}$= 4.014	
	S= 6.199				S= 6.193	

Table 40. Distribution of scores on Role Performance Index #2 (X_{32})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
-7.001 and below	2	2.1	0	0	2	2.4
-7.000- -.928	8	8.4	0	0	8	9.8
- .927-5.145	34	35.8	4	30.8	30	36.6
5.146-11.218	36	37.9	6	46.2	30	36.6
11.219-17.291	10	10.5	2	15.4	8	9.8
17.292-23.364	4	4.2	1	7.7	3	3.7
23.365 and above	1	1.1	0	0	1	1.2
Total	95	100.0	13	100.1	82	100.1
	Range= -8.847- -25.532		Range= 2.717- 21.255		Range= -8.847- -25.532	
	$\bar{X}$= 6.078				$\bar{X}$= 5.642	
	S= 6.073				S= 6.126	

Role Performance Index #3 (X_{33}) was developed by summing items loading significantly (at least .40) and uniquely on the first unrotated factor of a principal components factor analysis. Of 79 performance questions asked in the interview schedule, 59 were judged to be relatively independent and were included in the factor analysis. A total of 26 questions made up this performance index. Those questions that were not scored by the certainty method had their scores converted to Z scores before they were added in with the certainty-scored items. A list of the items included in Role Performance Index #3, their codes (for non-certainty items), and their factor loadings are presented in Appendix G. The

distribution of scores is presented in Table 41.

Indices #1 and #2 intercorrelate .7380, and correlate .7888 and .7427 respectively with index #3.

Table 41. Distribution of scores on Role Performance Index #3 (X_{33})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
-10.002 and below	3	3.2	0	0	3	3.7
-10.001- -6.127	9	9.5	0	0	9	11.0
-6.126- -2.252	17	17.9	0	0	17	20.7
-2.251-1.623	23	24.2	2	15.4	21	25.6
1.624-5.498	13	13.7	1	7.7	12	14.6
5.499-9.373	6	6.3	0	0	6	7.3
9.374-13.248	13	13.7	6	46.2	7	8.5
13.249-17.123	9	9.5	4	30.8	5	6.1
17.124 and above	2	2.1	0	0	2	2.4
Total	95	100.1	13	100.1	82	99.9
	Range= -12.618- -19.705		Range=.162- 16.602		Range= -12.618- 19.705	
	$\bar{X}$= 2.175				$\bar{X}$= .909	
	S= 7.750				S=7.346	

Social systems - the cooperative

Elements - power (X_{34}) The managers were asked a number of questions about the decision-making process within their cooperatives. These were preceded by the following statement:

> One of the most significant processes in the operation of a cooperative is the decision-making process performed by the board of directors and the manager. We would like to find out a little about this process as it occurs in this business.

> I will read to you a series of decisions which must be made in the operation of a business. Please indicate which of the categories on CARD 35 best describes who <u>actually</u> makes the final decision in this business.

The managers were given a card containing seven categories.[1] The interviewers repeated the content of each answer as it was given to them to be certain that they had it correct. The respondents were asked:

> Who makes the decision on:
>
> Whether to add or drop a product line?
>
> Establishing or setting the policy for equipment repair of replacement?
>
> The firing of employees other than the manager and assistant manager?
>
> Setting policy which determines the methods of financing to be used in the business?
>
> Evaluating, modifying, adding to or eliminating existing job descriptions of any employees other than the manager and assistant manager?
>
> Incurring short-term credit under 10% of current liabilities?
>
> Incurring long-term debt in excess of 5% of long-term liabilities?
>
> Whether or not to replace a major piece of equipment?
>
> The hiring of a new employee for an existing position other than the manager?
>
> Whether or not to hire an additional employee for the business?

---

[1]Response categories were: manager alone; manager, after checking with key board members; manager, with formal approval of board; joint decision of manager and board; board, with manager's advice or recommendation; board alone; and membership vote at annual or special meeting.

The score assigned for the Power Index was the total number of times that a manager responded "manager alone" or "manager, after checking with key board members".

The distribution of scores is presented in Table 42.

Table 42. Distribution of scores on the Power Index (X_{34})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
1	5	5.3	0	0	5	6.1
2	3	3.2	0	0	3	3.7
3	10	10.5	1	7.7	9	11.0
4	22	23.2	4	30.8	18	22.0
5	14	14.7	5	38.5	9	11.0
6	24	25.3	2	15.4	22	26.8
7	11	11.6	0	0	11	13.4
8	6	6.3	1	7.7	5	6.1
Total	95	100.1	13	100.1	82	100.1
	Range= 1-8 $\bar{X}$= 4.296 S= 1.749		Range= 3-8		Range= 1-8 $\bar{X}$= 4.927 S= 1.820	

Processes - socialization

Employee training (X_{35}) Managers were asked:

Have you had any specialized training in any of your major product lines or in management itself, during the past 2 years? (Specialized training includes workshops, short courses, training schools, refresher courses, conferences, etc.)

They were then asked:

> Have your department heads or key employees had any of this training?

If the manager responded affirmatively, he was asked:

> Using 8 hour day equivalents, how many days training have they received during the last 2 years?

Line	Yes	No	Amount of Training
Chemical	2	1	_____
Feed	2	1	_____
Fertilizer	2	1	_____
Lumber	2	1	_____
Machinery	2	1	_____
Management	2	1	_____
Petroleum	2	1	_____
Seed	2	1	_____

The amount of training (in 8-hour day equivalents) that employees had received in each of the areas was summed to yield an index of training. The managers were asked the following questions about the number of people they employed and the number of people hired to fill new positions:

> In addition to yourself, how many people do you employ at the present time?
>
> How many people have you hired in the past year to fill new positions created by the expansion of this business?

In determining the amount of training per employee, the number of employees hired during recent expansion (as measured by the above question) was subtracted from the number of employees at the time of the interview to obtain a better estimate of the average number of employees in the business during the two-year training period. This estimate of the number of

employees was then divided into scores on the training index to yield an Employee Training Index.

The distribution of scores is presented in Table 43.

Table 43. Distribution of scores on the Employee Training Index (X_{35})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
.86 and below	13	13.7	2	15.4	11	13.4
.87-2.00	25	26.3	4	30.8	21	25.6
2.01-3.14	16	16.8	0	0	16	19.5
3.15-4.28	8	8.4	1	7.7	7	8.5
4.29-5.42	5	5.3	0	0	5	6.1
5.43-6.56	8	8.4	3	23.1	5	6.1
6.57-7.70	5	5.3	1	7.7	4	4.9
7.71-8.84	7	7.4	0	0	7	8.5
8.85-9.98	1	1.1	0	0	1	1.2
9.99-11.12	1	1.1	0	0	1	1.2
11.13 and above	6	6.3	2	15.4	4	4.9
Total	92	100.1	13	100.1	82	99.9
	Range= 0-29.16 $\bar{X}$= 4.288 S= 4.579		Range= 0-29.16		Range= 0-17.50 $\bar{X}$= 3.927 S= 3.492	

Manager training (X_{36}) Managers were asked:

> Have you had any specialized training in any of your major product lines or in management itself, during the past 2 years? (Specialized training includes workshops, short courses, training schools, refresher courses conferences, etc.)

If the manager responded affirmatively, he was asked:

> Using 8 hour day equivalents, how many days training have you received during the last 2 years?

Line	Yes	No	Amount of Training
Chemical	2	1	_____
Feed	2	1	_____
Fertilizer	2	1	_____
Lumber	2	1	_____
Machinery	2	1	_____
Management	2	1	_____
Petroleum	2	1	_____
Seed	2	1	_____

The amount of training (in 8-hour day equivalents) that the manager had received in the area of management was used as an index of his management training.

The distribution of scores is presented in Table 44.

Table 44. Distribution of scores on the Management Training Index (X_{36})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
1 and below	39	41.1	4	30.8	35	42.7
2-4	22	23.2	2	15.9	20	24.4
5-7	15	15.8	3	23.1	12	14.6
8-10	6	6.3	1	7.7	5	6.1
11-13	1	1.1	0	0	1	1.2
14-16	2	2.1	0	0	2	2.4
17-19	2	2.1	1	7.7	1	1.2
20-22	5	5.3	2	15.4	3	3.7
23 and above	3	3.2	0	0	3	3.7
Total	95	100.2	13	100.1	82	100.0
	Range= 0-80 $\bar{X}$= 5.474 S = 9.998		Range= 0-20		Range= 0-80 $\bar{X}$= 5.268 S=10.343	

Sub-systems--board of directors

Over-all performance (X_{37}) The managers were asked to respond to a series of statements about their board of directors. The following instructions were given to the respondents:

> I will now read to you a series of statements about the relationship between yourself and the board of directors. I wish to emphasize that your reactions will be kept strictly confidential and will not be shown to any individuals outside the research team. Nor will they be identified with either you or this cooperative specifically. It is extremely important in this type of research that we obtain answers that most completely represent your feelings.
>
> After I read each statement, using the categories on CARD 40 please indicate whether you agree with the statement or disagree with it. Then indicate a number which best describes how strongly you feel about the statement.
>
> *[Interviewer: Encircle the appropriate code. If the respondent refuses to answer or will not give an opinion, encircle both "A" and "D"].

The respondents were then given a card containing the following response format:

	slight				strong
A					
	1	2	3	4	5
D					

The following statements were then presented:

> My board of directors puts too many restrictions on me as the manager.*
>
> The board usually gives me sufficient freedom to do my job well.
>
> I wish by board would move more quickly in making decisions.*

The board of directors makes some decisions that I should make.*

The board for this co-op does not take the initiative in the areas where they have the responsibility.*

The board of directors really lets me run this business as I want to.

My board of directors is actually quite competent.

The following scores were assigned to responses:

Responses	D-5	D-4	D-3	D-2	D-1	A/D	A-1	A-2	A-3	A-4	A-5
Coded Values	0	3	5	6	7	8	9	10	11	13	16

The above coding procedure was followed for positive items, for negative items (indicated above with an asterisk) the code was reversed.

All but the first item listed above were included in the Board Performance Scale. The correlations of the first items with the other items in the scale were not strong enough for it to be included. Date relevant to the Board Performance Scale are presented in Table 45.

The item numbers in the table apply to the last six items in the above list.

The distribution of scores on the Board Performance Scale is presented in Table 46.

Restrictions (X_{38}) The restrictions placed on the manager by the board was measured by responses to the following question:

Table 45. Board Performance Scale item intercorrelations and item-total correlations[a,b]

Item No.	1	2	3	4	5	6	Total[c]
1	-	.2404	.2825	.3258	.1306	.4184	.5115
2		-	.3606	.4363	.3379	.2161	.7074
3			-	.2977	.3458	.2893	.6798
4				-	.2721	.5177	.7451
5					-	.3018	.6245
6						-	.6241

[a]Reliability coefficient = r_{tt} = .7368.

[b]The above table includes only the significant items which have been used in the final analysis.

[c]Greater than the minimum acceptable item total correlation coefficient r_{it}.

Table 46. Distribution of scores on the Board Performance Scale (X_{37})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
37 and below	1	1.1	1	7.7	0	0
38-41	2	2.1	0	0	2	2.4
42-45	2	2.1	0	0	2	2.4
46-49	6	6.3	2	15.4	4	4.9
50-53	18	18.9	7	53.8	11	13.4
54-57	8	8.4	0	0	8	9.8
58-61	25	26.3	2	15.4	23	28.0
62-65	19	20.0	1	7.7	17	22.0
66-69	7	7.4	0	0	7	8.5
70-73	5	5.3	0	0	5	6.1
74 and above	2	2.1	0	0	2	2.4
Total	95	100.0	13	100.0	82	99.9
	Range= 34-88		Range= 34-64		Range= 38-88	
	$\bar{X}$= 58.442				$\bar{X}$= 59.366	
	S= 8.153				S= 7.930	

> My board of directors puts too many restrictions on me as the manager.

This item was included in the initial development of the board performance scale, but it was not included in the final scale. The introductory paragraphs that preceded this item in the interview schedule were discussed in relation to the board performance scale and will not be presented again here.

> The following scores were assigned to responses to this item:

Responses	D-5	D-4	D-3	D-2	D-1	A/D	A-1	A-2	A-3	A-4	A-5
Coded Values	16	13	11	10	9	8	7	6	5	3	0

The distribution of scores on the Board Restrictions Index is presented in Table 47.

Sub-systems - employee turnover (X_{39}) The following three questions were asked managers about their employees:

> In addition to yourself, how many people do you employ at the present time?
>
> How many new people have you hired in the past year as replacements for employees who are no longer employed here?
>
> How many people have you hired in the past year to fill new positions created by the expansion of this business?

The average number of employees who had been employed in the cooperative the year preceding the interview was estimated by subtracting one-half of the people hired to fill

Table 47. Distribution of scores on the Board Restrictions Index (X_{38})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
1 and below	1	1.1	0	0	1	1.2
2-3	0	0	0	0	0	0
4-5	0	0	0	0	0	0
6-7	3	3.2	0	0	3	3.7
8-9	0	0	0	0	0	0
10-11	17	17.9	3	23.1	14	17.1
12-13	39	41.1	1	7.7	38	46.3
14 and above	35	36.8	9	69.2	26	31.7
Total	95	100.1	13	100.0	82	100.0
	Range= 0-16 $\bar{X}$= 13.379 S= 2.664		Range= 10-16		Range= 0-16 $\bar{X}$= 13.195 S= 2.675	

new positions (question #3 above) from the number of people employed at the time of the interview (question #1 above). This result was then divided into the estimate of number of replacements (question #2 above) to provide the Employee Turnover Index.

The distribution of scores on the Employee Turnover Index is presented in Table 48.

Table 48. Distribution of scores on the Employee Turnover Index (X_{39})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
.103 and below	24	25.3	2	15.4	22	26.8
.104-.207	30	31.6	6	46.2	24	29.3
.208-.311	19	20.0	4	30.8	15	18.3
.312-.415	11	11.6	0	0	11	13.4
.416-.519	3	3.2	0	0	3	3.7
.520-.623	3	3.2	0	0	3	3.7
.624-.727	1	1.1	1	7.7	0	0
.728-.831	1	1.1	0	0	1	1.2
.832-.936	1	1.1	0	0	1	1.2
.937 and above	2	2.1	0	0	2	2.4
Total	95	100.3	13	100.3	82	100.0
	Range= .000-.999		Range= .000-.643		Range= .000-.999	
	$\bar{X}$= .229				$\bar{X}$= .233	
	S= .208				S= .215	

External systems - advisors (X_{40})

The use of advisors was assessed by asking the managers whether or not they used specialized outside help, and if they did what type of help was used. The following questions were employed:

> Do you seek any specialized outside help in the operation of this business to help you and the board make decisions and carry them out?

If the manager responded affirmatively to the above question, he was asked:

What type of specialized help do you use?

Code
0 = does not apply
1 = check with other co-ops that have had similar problems
2 = lawyers and C.P.A.'s for legal and financial advice only
3 = specialists of various kinds; field men from suppliers and Regional Co-op for financial, legal, and technical assistance

The total score on the Advisor-use Index was computed by summing scores on the two questions above.

The distribution of scores on the Advisor-use Index presented in Table 49.

Table 49. Distribution of scores on the Advisor-use Index (X_{40})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
0	25	26.3	0	0	25	30.5
1	2	2.1	0	0	2	2.4
2	10	10.5	1	7.7	9	11.0
3	58	61.1	12	92.3	46	56.1
Total	95	100.0	13	100.0	82	100.0
	Range= 0-3 $\bar{X}$= 2.063 S= 1.296		Range= 2-3		Range= 0-3 $\bar{X}$= 1.927 S= 1.341	

Economic success of the cooperative

To measure the economic success of a business firm, it is necessary to make certain assumptions about its goals.

It was observed earlier that the most frequently-mentioned goal of managers and board chairmen interviewed in conjunction with this study was to attain a satisfactory net savings. A number of other profit-related goals were also indicated. Based on these findings a tentative decision was made to employ an index of profitability to assess the economic success of the cooperatives.

Schermerhorn delineates two basic classes of ratios for testing the profitability of agricultural marketing firms (Schermerhorn, 1964, p. 25):

1. ratios which measure profitability as related to investment; and
2. ratios which measure profitability as related to sales.

Schermerhorn suggests that the second class of ratios (operating ratios) can

> be used to compare the current operations or trends of the business with the current operations of similar businesses (Schermerhorn, 1964, p. 26).

On the basis of this information the decision was made to employ one of the operating ratios delineated by Schermerhorn. An interview with Dr. J. T. Scott,[1] an expert on

[1]Scott, J. T., Department of Economics, Iowa State University, Ames, Iowa. Indices of economic success. Private Communication, 1971.

cooperatives in the Department of Economics at Iowa State University, led to the selection of operating profit/sales as the index of economic success to be employed.

Several adjustments based on Dr. Scott's suggestions were made in computation of the Profit/Sales Index. Two times the change in accelerated amortization (accelerated amortization 1965 minus accelerated amortization 1964) was added to total net operating profit for those two years. Patronage refunds for the two years, over which the manager typically has little control, were subtracted from income. This adjusted total net operating profit for 1964-1965 was then divided by total sales for 1964-1965 to yield Profit/Sales Index #1 (an index of profit/sales for 1964 and 1965). Profit/sales indices #2 and #3 were then computed in a like manner using only data for 1964 and 1965 respectively. As discussed earlier, no data were available on accelerated amortization or patronage refunds for the thirteen Farm Service cooperatives in the sample. This has the effect of inflating their profit/sales figures. This difference in the two subsamples was controlled in the two-variable analyses where the profit/sales measure was used by excluding the Farm Service cooperatives. In the regression and network analyses a dummy variable (cooperative type) was employed.

The distributions of scores on the profit/sales indices are presented in Tables 50, 51, and 52.

Table 50. Distribution of scores on Profit/Sales Index #1 (X_{41})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
-.0121 and below	4	4.2	0	0	4	4.9
-.0120- -.0011	5	5.3	0	0	5	6.1
-.0010-.0099	14	14.7	1	7.7	15	15.9
.0100-.0209	29	30.5	2	15.4	27	32.9
.0210-.0319	23	24.2	1	7.7	22	26.8
.0320-.0429	11	11.6	3	23.1	8	9.8
.0430-.0539	3	3.2	2	15.4	1	1.2
.0540-.0649	1	1.1	0	0	1	1.2
.0650-.0759	1	1.1	0	0	1	1.2
.0760-.0869	2	2.1	2	15.4	0	0
.0870 and above	2	2.1	2	15.4	0	0
Total	95	100.1	13	100.1	82	100.1
	Range= -.0185- .1164		Range= .0074- .1164		Range= -.0185- .0749	
	$\bar{X}$= .0209				$\bar{X}$= .0164	
	S= .0220				S= .0159	

Table 51. Distribution of scores on Profit/Sales Index #2 (X_{42})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
-.0359 and below	1	1.1	0	0	1	1.2
-.0358- -.0238	1	1.1	0	0	1	1.2
-.0237-.0117	24	25.3	1	7.7	23	28.0
.0118-.0239	26	27.4	1	7.7	25	30.5
.0240-.0359	22	23.2	3	23.1	19	23.2
.0360-.0480	10	10.5	2	15.4	8	9.8
.0481-.0602	5	5.3	2	15.4	3	3.7
.0603-.0723	1	1.1	1	7.7	0	0
.0724-.0844	2	2.1	1	7.7	1	1.2
.0845-.0965	2	2.1	1	7.7	1	1.2
.0966 and above	1	1.1	1	7.7	0	0
Total	95	100.3	13	100.1	82	100.0
	Range=-.0394-.0852		Range= .0085-.1262		Range= -.0394-.1262	
	$\bar{X}$= .0238				$\bar{X}$= .0195	
	S= .0249				S= .0203	

Table 52. Distribution of scores on Profit/Sales Index #3 (X_{43})

Score Category	Total #	Total %	Farm Service #	Farm Service %	Other #	Other %
-.0185 and below	2	2.1	1	7.7	1	1.2
-.0184-.0072	26	27.4	1	7.7	25	30.5
.0073-.0185	28	29.5	1	7.7	27	32.9
.0186-.0297	21	22.1	2	15.4	19	23.2
.0298-.0410	8	8.4	1	7.7	7	8.5
.0411-.0522	4	4.2	3	23.1	1	1.2
.0523-.0634	1	1.1	0	0	1	1.2
.0635-.0747	1	1.1	0	0	1	1.2
.0748-.0859	2	2.1	2	15.4	0	0
.0860 and above	2	2.1	2	15.4	0	0
Total	95	100.1	13	100.1	82	99.9
	Range= -.0018-.0635		Range= -.0158-.1071		Range= -.0018-.1071	
	$\bar{X}$= .0185				$\bar{X}$= .0141	
	S= .0226				S= .0155	

Analysis Procedures

Correlation analysis and multiple linear regression were used to assess the interrelationships of variables.

Correlation analysis was used to evaluate the two-variable relationships. Blalock (1960, p. 273) indicates that where the nature of the research task is exploratory and emphasis is on locating important variables, the researcher

should be concerned with strength of relationships in terms of correlation coefficients.

Since this research is primarily exploratory, the .10 level of probability was considered to be an acceptable indication of a statistically significant relationship in the evaluation of the two-variable hypotheses. Although no hypotheses were developed for the regression coefficients in the all-variables regression models, coefficients that were significant at the .10 level were singled out for discussion. In the regression and path model building the .20 level of significance was employed because these findings were cross-validated.

The significance of the correlation and regression coefficients was assessed with t tests. In regression model building a partial F test (equivalent to t^2) was employed. The significance of multiple correlation coefficients was assessed with the F test.

Ostle (1964, p. 225) indicates that the interpretation of r is valid regardless of what assumptions are made concerning the variables involved. However, if one wishes to test hypotheses about the true value of ρ in which the t test is employed, one must assume random sampling from a bivariate normal population.

As Blalock (1960, p. 327) indicates, the assumptions for multiple linear regression are similar; one assumes

multivariate normality and independent random sampling. The assumption of multivariate normality includes the assumptions of a linear, additive model; a normal distribution of Y's for each X ; and equal distributions of Y's across S's (homoschedasticity). The assumption of interval scales is also made in both correlation and regression analysis.

Departure from the above assumptions will affect significance levels of tests (significance will be at a lesser level than that reported); and the sensitivity of the F or t tests, i.e. relationships actually significant at a given level may not be indicated by these tests if the assumptions are not met.

The sampling procedures employed in this study make it possible to assume independence and randomness. Methodological procedures used in the development of the performance indices make the assumption of an interval scale reasonable. Although attempts were made to measure each variable in an interval manner, this assumption is probably not met with many of the measures. However, Labovitz indicates that

> [b]y treating almost but not exactly intervally-measured variables as ordinal (although they lie somewhere in between) we are losing the knowledge of at least an approximation to equal distances between adjacent scores. Some idea of the difference between two scores is much more useful than just knowledge that one is greater than the other (Labovitz, 1967, p. 153).

Labovitz goes on to demonstrate that applying a monotone linear scoring system to ordinal data yields a small amount

of error. Nunnaly (1967) also indicates that as long as data are at least in the form of an ordinal scale violation of the assumption of interval scales is not serious.

The distribution on the profit/sales indices was somewhat skewed, but this was largely a result of the difference in profit computations for the Farm Service cooperatives which was controlled for in the analyses. The distribution of scores on the performance measures appeared to be essentially normal.

Homogeneity of variances was not precisely assessed, but inspection of the data indicated some heteroschedasticity.

Although it is evident that not all the data conform to the assumptions necessary for the use of parametric tests, the assumptions necessary to apply these tests will be made for the following reasons:

1. The assumptions of normality, homogeneity of variance, interval scales, linearity, and independence, do not appear to be seriously violated.
2. The law of large numbers states that the distribution of the sample mean becomes more concentrated about the population mean as the sample size increases (provided the variance is finite). The central limit theorem states that the distribution of the sample mean approaches a normal distribution as the sample size increases (given a finite variance of the

sampled population). Thus, even though a variable may have a non-normal parent distribution, these laws suggest that the assumption of normality can still be met when large samples are drawn.

3. The F statistic is also quite robust. Ostle states:

> In general, the consequences are not serious when the assumptions made in connection with analyses of variance are not strictly satisfied. That is, moderate departures from the conditions specified by the assumptions need not alarm us. For example, minor deviations from normality and/or some degree of heteroschedasticity (lack of homogeneity of variances) will have little effect on the usual tests and the resulting inferences. In summary, the analysis of variance technique is quite robust, and thus the researcher can rely on its doing a good job under most circumstances (Ostle, 1964, p. 339).

4. The results of these statistical tests will be interpreted more in a descriptive or qualitative manner than in a strict analytical or quantitative sense. The focus is on general relationships rather than precise specification. Thus, extreme precision in the statistical tests is not of prime concern in this thesis.

CHAPTER FIVE: FINDINGS: TWO-VARIABLE ANALYSES

Introduction

The purpose of this chapter is to state the hypotheses to be empirically tested, and to present the findings from the statistical analysis of the empirical hypotheses. The theoretical hypotheses presented in the Derivation of Hypotheses chapter are summarized here. Empirical hypotheses are presented in which the operational measures discussed in the Methods chapter are substituted for the theoretical concepts. The empirical hypotheses are tested using correlation analysis. A brief discussion and summary of the findings is presented at the end of this chapter.

Statement of Hypotheses

The theoretical hypotheses are presented below in summary fashion. For the exact wording of these hypotheses, reference can be made to the Derivation of Hypotheses chapter. The empirical hypotheses relating to the theoretical hypotheses are presented following the theoretical hypotheses. The first three numbers in the coding of these hypotheses refer to the general, sub-general, and specific hypotheses respectively at the theoretical level. The fourth number delineates different empirical measures of the same theoretical concept. The number in parentheses following each empirical hypothesis corresponds to numbers assigned to empirical measures in the

Methods chapter. These numbers may also be used to compare these two-variable relationships to multi-variate results in the following two chapters.

The two dependent measures employed in the empirical hypotheses are the general measure of role performance (X_{33}) and the composite measure of profit/sales (X_{41}).

General hypotheses

There is a relationship[1] between each of the following theoretical concepts and a manager's role performance:

G.H. 1: a manager's education (positive)

G.H. 2: a manager's favorable life experiences (positive)

G.H. 3: a manager's management experience (positive)

G.H. 4: a manager's interpersonal traits

G.H. 5: a manager's self-confidence (positive)

G.H. 6: a manager's motivational orientation in his managerial role

G.H. 7: a manager's role-related knowledge (positive)

G.H. 8: a manager's rational value orientation toward economic ends (positive)

G.H. 9: a manager's participation in community organizations (positive)

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[1]If the hypothesis is directional, direction is indicated in parentheses.

G.H. 10: a manager's power (positive)

G.H. 11: the amount of training within a cooperative (positive)

G.H. 12: the action of a manager's board of directors

G.H. 13: the use of advisors (positive)

There is a relationship between each of the following theoretical concepts and the economic success of a cooperative:

G.H. 14: a manager's education (positive)

G.H. 15: a manager's favorable life experiences (positive)

G.H. 16: a manager's management experience (positive)

G.H. 17: a manager's interpersonal traits

G.H. 18: a manager's self-confidence (positive)

G.H. 19: a manager's motivational orientation in his managerial role

G.H. 20: a manager's role-related knowledge (positive)

G.H. 21: a manager's rational value orientation toward economic ends (positive)

G.H. 22: a manager's participation in community organizations (positive)

G.H. 23: a manager's power (positive)

G.H. 24: the amount of training within a cooperative (positive)

G.H. 25: the action of sub-systems within a cooperative

G.H. 26: the use of advisors (positive)

G.H. 27: a manager's role performance (positive)

Sub-general hypotheses

There is a relationship between each of the following theoretical concepts and a manager's role performance:

S-g.H. 4.1: a manager's interpersonal trait of dominance (positive)

S-g.H. 4.2: A manager's interpersonal trait of achievement (positive)

S-g.H. 6.1: a manager's orientation toward profit maximization (positive)

S-g.H. 6.2: a manager's attitude toward social objects within the cooperative

S-g.H. 6.3: a manager's attitude toward his role (positive)

S-g.H. 6.4: a manager's attitude toward his competitive situation (positive)

S-g.H. 7.1: a manager's product knowledge (positive)

S-g.H. 7.2: a manager's economic knowledge (positive)

S-g.H. 11.1: the amount of training given to employees (positive)

S-g.H. 11.2: the amount of training given to a manager (positive)

S-g.H. 12.1: the over-all performance of a manager's board of directors (positive)

S-g.H. 12.2: the restrictions placed on a manager by his board of directors (negative)

There is a relationship between each of the following theoretical concepts and the economic success of a cooperative:

S-g.H. 17.1: a manager's interpersonal trait of dominance (positive)

S-g.H. 17.2: a manager's interpersonal trait of achievement (positive)

S-g.H. 19.1: a manager's orientation toward profit maximization (positive)

S-g.H. 19.2: a manager's attitude toward social objects within the cooperative

S-g.H. 19.3: a manager's attitude toward his role (positive)

S-g.H. 19.4: a manager's attitude toward his competitive situation (positive)

S-g.H. 20.1: a manager's product knowledge (positive)

S-g.H. 20.2: a manager's economic knowledge (positive)

S-g.H. 24.1: the amount of training given to employees (positive)

S-g.H. 24.2: the amount of training given to a manager (positive)

S-g.H. 25.1: the action of a manager's board of directors

S-g.H. 25.2: employee turnover (negative)

Specific hypotheses

There is a relationship between each of the following theoretical concepts and a manager's role performance:

S.H. 6.2.1: a manager's attitude toward himself as manager (positive)

S.H. 6.2.2: a manager's attitude toward his employees (positive)

S.H. 6.3.1: the amount of power the manager sees associated with the managerial role (positive)

S.H. 6.3.2: a manager's perception of the importance of new management information (positive)

S.H. 6.3.3: a manager's job satisfaction (positive)

There is a relationship between each of the following theoretical concepts and the economic success of a cooperative:

S.H. 19.2.1: a manager's attitude toward himself as manager (positive)

S.H. 19.2.2: a manager's attitude toward his employees (positive)

S.H. 19.3.1: the amount of power a manager sees associated with the managerial role (positive)

S.H. 19.3.2: a manager's perception of the importance of new management information (positive)

S.H. 19.3.3: a manager's job satisfaction (positive)

S.H. 25.1.1: the over-all performance of a manager's board of directors (positive)

S.H. 25.1.2: the restrictions placed on a manager by his board of directors (negative)

Empirical hypotheses

There is a relationship[1] between each of the following empirical scores and a manager's role performance score (X_{33}):

E.H. 1.0.0.1:[2] education score (1)[3]

E.H. 2.0.0.1: favorable life experiences score (2)

E.H. 3.0.0.1: years of management experience (3)

E.H. 4.1.0.1: dominance score #1[4] (4)

E.H. 4.1.0.2: dominance score #2 (5)

E.H. 4.2.0.1: achievement score (6)

E.H. 5.0.0.1: self-confidence score (7)

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[1]All relationships are hypothesized to be positive except those in empirical hypotheses 6.2.1.1, 6.4.0.1, 19.2.1.1, 19.4.0.1, and 25.2.0.1 which are hypothesized to be negative. These hypotheses are indicated with an asterisk.

[2]E.H. is an abbreviation for empirical hypothesis and is used throughout this dissertation. The identification number follows this format: number of general hypothesis, number of sub-general hypothesis, number of specific hypothesis, and number of empirical measure.

[3]The number in parentheses following each empirical hypothesis is the number of the empirical measure presented in the Methods chapter that is employed in the hypothesis.

[4]Where scores are numbered, score #1 refers to the score on the first operational measure of the concept (index #1 or scale #1), score #2 refers to the second index or scale, and so on.

E.H. 6.1.0.1: profit goal orientation score #1 (8)

E.H. 6.1.0.2: profit goal orientation score #2 (9)

E.H. 6.1.0.3: profit goal orientation score #3 (10)

E.H. 6.2.1.1: managerial rank score (11)*

E.H. 6.2.2.1: employee attitude score #1 (12)

E.H. 6.2.2.2: employee attitude score #2 (13)

E.H. 6.2.2.3: employee attitude score #3 (14)

E.H. 6.3.1.1: perceived power score (15)

E.H. 6.3.2.1: management information score (16)

E.H. 6.3.3.1: job satisfaction score #1 (17)

E.H. 6.3.3.2: job satisfaction score #2 (18)

E.H. 6.3.3.3: job satisfaction score #3 (19)

E.H. 6.4.0.1: attitude toward competitive situation score (20)*

E.H. 7.1.0.1: product knowledge score (21)

E.H. 7.2.0.1: economic knowledge score #1 (22)

E.H. 7.2.0.2: economic knowledge score #2 (23)

E.H. 7.2.0.3: economic knowledge score #3 (24)

E.H. 8.0.0.1: rational value orientation score #1 (25)

E.H. 8.0.0.2: rational value orientation score #2 (26)

E.H. 8.0.0.3: rational value orientation score #3 (27)

#.H. 9.0.0.1: organizational participation score #1 (28)

E.H. 9.0.0.2: organizational participation score #2 (29)

E.H. 9.0.0.3: organizational participation score #3 (30)

E.H. 10.0.0.1: power score (34)

E.H. 11.1.0.1: employee training score (35)

E.H. 11.2.0.1: management training score (36)

E.H. 12.1.0.1: board performance score (37)

E.H. 12.2.0.1: board restrictions score (38)

E.H. 13.0.0.1: advisor use score (40)

There is a relationship between each of the following empirical scores and the profit/sales (X_{41}) of a cooperative:

E.H. 14.0.0.1: education score (1)

E.H. 15.0.0.1: favorable life experiences score (2)

E.H. 16.0.0.1: years of management experience (3)

E.H. 17.1.0.1: dominance score #1 (4)

E.H. 17.1.0.2: dominance score #2 (5)

E.H. 17.2.0.1: achievement score (6)

E.H. 18.0.0.1: self-confidence score (7)

E.H. 19.1.0.1: profit goal orientation score #1 (8)

E.H. 19.1.0.2: profit goal orientation score #2 (9)

E.H. 19.1.0.3: profit goal orientation score #3 (10)

E.H. 19.2.1.1: managerial rank score (11)*

E.H. 19.2.2.1: employee attitude score #1 (12)

E.H. 19.2.2.2: employee attitude score #2 (13)

E.H. 19.2.2.3: employee attitude score #3 (14)

E.H. 19.3.1.1: perceived power score (15)

E.H. 19.3.2.1: management information score (16)

E.H. 19.3.3.1: job satisfaction score #1 (17)

E.H. 19.3.3.2: job satisfaction score #2 (18)

E.H. 19.3.3.3: job satisfaction score #3 (19)

E.H. 19.4.0.1: attitude toward competitive situation score (20)*

E.H. 20.1.0.1: product knowledge score (21)

E.H. 20.2.0.1: economic knowledge score #1 (22)

E.H. 20.2.0.2: economic knowledge score #2 (23)

E.H. 20.2.0.3: economic knowledge score #3 (24)

E.H. 21.0.0.1: rational value orientation score #1 (25)

E.H. 21.0.0.2: rational value orientation score #2 (26)

E.H. 21.0.0.3: rational value orientation score #3 (27)

E.H. 22.0.0.1: organizational participation score #1 (28)

E.H. 22.0.0.2: organizational participation score #2 (29)

E.H. 22.0.0.3: organizational participation score #3 (30)

E.H. 23.0.0.1: power score (34)

E.H. 24.1.0.1: employee training score (35)

E.H. 24.2.0.1: management training score (36)

E.H. 25.1.1.1: board performance score (37)

E.H. 25.1.2.1: board restrictions score (38)

E.H. 25.2.0.1: turnover (39)*

E.H. 26.0.0.1: advisor use score (40)

E.H. 27.0.0.1: role performance score (31)

E.H. 27.0.0.2: role performance score (32)

E.H. 27.0.0.3: role performance score (33)

Tests of Empirical Hypotheses

The empirical hypotheses are analyzed by use of correlation. If the hypothesized relationship in the empirical hypothesis was negative, the statistical hypotheses employed were:

H_O: $\rho \geq 0$, H_A: $\rho < 0$

If the hypothesized relationship was positive, the statistical hypotheses employed were:

H_O: $\rho \leq 0$, H_A: $\rho > 0$

The values of the correlation coefficients were tested for significance using the t test technique. The sample value of t is

$t = r\sqrt{(n-2)/(1-r^2)}$, d.f. = n-2 (Snedecor, 1956, p .173)

The null hypothesis will be considered to be refuted if the computed value of t is greater than the tabular value of t at the .10 significance level.[1] For the one-tailed t test with 93 degrees of freedom this value is 1.291.(Snedecor, 1956, p. 46). This requires an r greater than or equal to |.1339|.

If the null hypothesis is refuted, the empirical hypothesis is considered to support the general hypothesis.

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[1]Since this research is essentially exploratory, a significance level greater than the traditional .05 was employed so that potentially promising relationships would not be ignored.

A summary of the tests of hypotheses relating to performance is presented in Table 53. A summary of the tests of hypotheses relating to profit/sales is presented in Table 54. The full sample size of 95 was used in testing the empirical hypotheses relating to performance. However, certain data necessary for the computation of profit/sales were not available for thirteen Farm Service cooperatives, so only the remaining 82 cooperatives were included in tests of hypotheses involving profit/sales as the dependent variable.

The tabular t that will be used to test hypotheses involving profit/sales is 1.293 (Snedecor, 1956, p. 46) at the .10 significance level with 80 degrees of freedom. This requires an r of $|.1446|$.

Discussion and Summary of Findings

Tests of hypotheses related to performance

Eight of the thirty-six empirical hypotheses relating to a manager's role performance (X_{33}) were not supported at the 10 percent level. However, five of these were in two areas--profit goal orientation and job satisfaction. All the general hypotheses but one (education) were given at least tentative support.

Table 53. Summary of findings for the empirical hypotheses relating to role performance (X_{33})

Concepts and Empirical Hypotheses	Correlation Coefficient	Significance Level	Support for General Hypothesis[a]
MANAGER'S SOCIALIZATION			
Education			
E.H. 1.0.0.1: education score	.3715	.0005	Support
Favorable life experiences			
E.H. 2.0.0.1: favorable life experiences score	.1690	.1000	Support
Job-related socialization			
E.H. 3.0.0.1: years of management experience	-.1823	>.2500[b]	No support
MANAGER'S PERSONALITY SYSTEM (GENERAL)			
Interpersonal response traits			
E.H. 4.1.0.1: dominance score #1	.3825	.0005	Support
E.H. 4.1.0.2: dominance score #2	.3673	.0005	Support
E.H. 4.2.0.1: achievement score	.2495	.0250	Support
Self-confidence			
E.H. 5.0.0.1: self-confidence score	.3582	.0005	Support

[a]The null hypothesis is considered to be refuted and support indicated for the general hypothesis if the significance level is at least .10.

[b]The relationship found was opposite from the direction hypothesized.

Table 53. (Continued)

Concepts and Empirical Hypotheses	Correlation Coefficient	Significance Level	Support for General Hypothesis[a]
MANAGER'S PERSONALITY SYSTEM (STATUS-ROLE ORIENTATION)			
Motivational orientation			
E.H. 6.1.0.1: profit goal orientation score #1	.0091	>.2500	No support
E.H. 6.1.0.2: profit goal orientation score #2	.0355	>.2500	No support
E.H. 6.1.0.3: profit goal orientation score #3	.0253	>.2500	No support
E.H. 6.2.1.1: managerial rank score	-.1600	.1000	Support
E.H. 6.2.2.1: employee attitude score #1	.3744	.0005	Support
E.H. 6.2.2.2: employee attitude score #2	.1697	.1000	Support
E.H. 6.2.2.3: employee attitude score #3	.3619	.0005	Support
E.H. 6.3.1.1: perceives powers score	.2272	.0250	Support
E.H. 6.3.2.1: management information score	.1594	.1000	Support
E.H. 6.3.3.1: job satisfaction score #1	.1532	.1000	Support
E.H. 6.3.3.2: job satisfaction score #2	.0986	.2000	No support
E.H. 6.3.3.3: job satisfaction score #3	.1332	.1500	No support

Table 53. (Continued)

Concepts and Empirical Hypotheses		Correlation Coefficient	Significance Level	Support for General Hypothesis[a]
E.H. 6.4.0.1:	attitude toward competitive situation score	-.1467	.1000	Support
Cognitive orientation				
E.H. 7.1.0.1:	produce knowledge score	.3177	.0050	Support
E.H. 7.2.0.1:	economic knowledge score #1	.3093	.0050	Support
E.H. 7.2.0.2:	economic knowledge score #2	.3249	.0050	Support
E.H. 7.2.0.3:	economic knowledge score #3	.3718	.0005	Support
Rational value orientation				
E.H. 8.0.0.1:	rational value orientation score #1	.1412	.1000	Support
E.H. 8.0.0.2:	rational value orientation score #2	.4194	.0005	Support
E.H. 8.0.0.3:	rational value orientation score #3	.3499	.0050	Support
EXTRA-SYSTEM PERFORMANCE				
E.H. 9.0.0.1:	organizational participation score #1	.2782	.0050	Support
E.H. 9.0.0.2:	organizational participation score #2	.1243	.1500	No support
E.H. 9.0.0.3:	organizational participation score #3	.2329	.0250	Support

Table 53. (Continued)

Concepts and Empirical Hypotheses		Correlation Coefficient	Significance Level	Support for General Hypothesis[a]
COOPERATIVE VARIABLES				
Power				
E.H. 10.0.0.1:	power score	.1947	.0500	Support
Training				
E.H. 11.1.0.1:	employee training score	.2324	.0250	Support
E.H. 11.2.0.1:	management training score	.1840	.0500	Support
Action of sub-systems				
E.H. 12.1.0.1:	board performance score	.0565	>.2500	No support
E.H. 12.2.0.1:	board restrictions score	.1516	.1000	Support
EXTERNAL SYSTEMS				
E.H. 13.0.0.1:	advisor use score	.1356	.1000	Support

Table 54. Summary of findings for the empirical hypotheses relating to profit/sales (X_{41})

Concepts and Empirical Hypotheses	Correlation Coefficient	Significance Level	Support for General Hypothesis[a]
MANAGER'S SOCIALIZATION			
Education			
E.H. 14.0.0.1: education score	-.0286	>.2500	No support
Favorable life experiences			
E.H. 15.0.0.1: favorable life experiences score	.1241	.1500	No support
Job-related socialization			
E.H. 16.0.0.1: years of management experience	.3186	.0050	Support
MANAGER'S PERSONALITY SYSTEM (GENERAL)			
Interpersonal response traits			
E.H. 17.1.0.1: dominance score #1	-.0186	>.2500	No support
E.H. 17.1.0.2: dominance score #2	.0280	>.2500	No support
E.H. 17.2.0.1: achievement score	-.0145	>.2500	No support
Self-confidence			
E.H. 18.0.0.1: self-confidence score	-.0127	>.2500	No support

[a]The null hypothesis is considered to be refuted and support indicated for the general hypothesis if the significance level is at least .10.

Table 54. (Continued)

Concepts and Empirical Hypotheses		Correlation Coefficient	Significance Level	Support for General Hypothesis[a]
MANAGER'S PERSONALITY SYSTEM (STATUS-ROLE ORIENTATION)				
Motivational orientation				
E.H. 19.1.0.1:	profit goal orientation score #1	-.0947	.2500	No support
E.H. 19.1.0.2:	profit goal orientation score #2	-.0009	>.2500	No support
E.H. 19.1.0.3:	profit goal orientation score #3	-.0530	>.2500	No support
E.H. 19.2.1.1:	managerial rank score	-.1655	.1000	Support
E.H. 19.2.2.1:	employee attitude score #1	-.1394	.1500	No support
E.H. 19.2.2.2:	employee attitude score #2	.0092	>.2500	No support
E.H. 19.2.2.3:	employee attitude score #3	-.0408	>.2500	No support
E.H. 19.3.1.1:	perceived power score	.0923	.2500	No support
E.H. 19.3.2.1:	management information score	-.0383	>.2500	No support
E.H. 19.3.3.1:	job satisfaction score #1	-.0717	>.2500	No support
E.H. 19.3.3.2:	job satisfaction score #2	.0161	>.2500	No support
E.H. 19.3.3.3:	job satisfaction score #3	-.1470	.2500	No support

Table 54. (Continued)

Concepts and Empirical Hypotheses		Correlation Coefficient	Significance Level	Support for General Hypothesis[a]
E.H. 19.4.0.1:	attitude toward competitive situation score	-.1470	.1000	Support
Cognitive orientation				
E.H. 20.1.0.1:	product knowledge score	.2847	.0250	Support
E.H. 20.2.0.1:	economic knowledge score #1	.1329	.1500	No support
E.H. 20.2.0.2:	economic knowledge score #2	.2428	.0250	Support
E.H. 20.2.0.3:	economic knowledge score #3	.2180	.0500	Support
Rational value orientation				
E.H. 21.0.0.1:	rational value orientation score #1	.0847	.2500	No support
E.H. 21.0.0.2:	rational value orientation score #2	-.0263	>.2500	No support
E.H. 21.0.0.3:	rational value orientation score #3	.0291	>.2500	No support
EXTRA-SYSTEM PERFORMANCE				
E.H. 22.0.0.1:	organizational participation score #1	-.0393	>.2500	No support
E.H. 22.0.0.2:	organizational participation score #2	-.0220	>.2500	No support
E.H. 22.0.0.3:	organizational participation score #3	-.0719	>.2500	No support

Table 54. (Continued)

Concepts and Empirical Hypotheses		Correlation Coefficient	Significance Level	Support for General Hypothesis[a]
COOPERATIVE VARIABLES				
Power				
E.H. 23.0.0.1:	power	.0571	>.2500	No support
Training				
E.H. 24.1.0.1:	employee training score	-.0212	>.2500	No support
E.H. 24.2.0.1:	management training score	.1009	.2000	No support
Action of sub-systems				
E.H. 25.1.1.1:	board performance score	.0227	>.2500	No support
E.H. 25.1.2.1:	board restrictions score	.1104	.2000	No support
E.H. 25.2.0.1:	turnover	-.2315	.0250	Support
EXTERNAL SYSTEMS				
E.H. 26.0.0.1:	advisor use score	.1276	.1500	No support
E.H. 27.0.0.1:	role performance score #1	-.0867	>.2500	No support
E.H. 27.0.0.2:	role performance score #2	-.0091	>.2500	No support
E.H. 27.0.0.3:	role performance score #3	-.1998	>.2500[b]	No support

[b]The relationship found was opposite from the direction hypothesized.

self-confidence, product knowledge, and economic knowledge. Thus, as anticipated, manager variables seem to relate better to role performance than system variables.

The best predictor of performance among the socialization factors is education. As indicated earlier because of the strong correlation between intelligence and education, this relationship may also indicate that more intelligent managers tend to perform better.

The relationship between management experience and role performance was fairly strong and in a direction other than that hypothesized. A further investigation of the data was undertaken to see if extreme values or a limited range was influencing this relationship, but this did not seem to be the case. In understanding this relationship, one must remember that the manager's normative role was defined and measures of role performance developed on the basis of recommendations of academicians currently practicing. Younger managers with less experience would have more opportunity to have acquired knowledge of academically correct role performance, and would be able to communicate this information to interviewers in terms of what they were actually doing or would like to do, i.e. many young managers might be more aware of what they should do and give a socially desirable response instead of a description of their actual role performance.

The general personality factors of dominance and self-confidence were among the best predictors of role performance. These findings add more support to findings of other studies reported earlier that have shown dominance and self-confidence to be among the few general personality factors that are frequently good predictors of managerial performance.

The general hypothesis relating a manager's motivational orientation in his status-role to performance was not strongly supported. The three empirical hypotheses in which profit goal orientation was related to performance were not supported. Only one of three job satisfaction measures was found to be significantly related to performance. These findings shed some doubt on the generalizability of the positive relationship between satisfaction and performance in managerial samples found by Likert (1961).

With the exception of employee attitudes, the other motivational factors were given only moderate support. The findings indicate that there is a relatively strong relationship between a positive attitude toward employees and their capabilities and managerial performance. Although other studies reported earlier indicated a relationship between positive employee attitudes and work group performance, few studies have shown a relationship this strong between positive employee attitudes and managerial performance. Part of this relationship may be the reflection of a positive managerial self-concept (managerial self-concept and

attitude toward employees are positively related.) However, an important factor may be that managers who have more confidence in their employees delegate duties more efficiently and have increased time to devote to important tasks.

The cognitive factors (economic and product knowledge) show, in general, much stronger relationships to performance than the motivational factors. As was the case with education, these cognitive factors may also reflect effects of intelligence. A strong relationship between cognitive factors and performance as operationally defined in this thesis might be expected because of the cognitive emphasis on task orientation in the performance measures.

The general hypothesis relating rational value orientation to performance was supported strongly in two empirical hypotheses. This seems to support the earlier contention that instrumental-adaptive role performance tends to be most effectively guided with a rational value orientation.

The general hypothesis concerning the relation between a manager's participation in community organizations and his role performance was supported. One of the three empirical hypotheses in this area was not supported. The other two hypotheses in which this concept is operationalized are rather strongly supported. The failure to find a significant relationship between this one empirical measure and role performance scores may be due to the restriction of variance; the maximum possible score on the variable was three different

types of organizations with more than half the managers in this category. Many of these managers may have participated in many other different types of organizations.

Some support was shown for all the general hypotheses relating system factors to role performance, but as anticipated, managerial characteristics were found to relate more strongly than system variables to managerial performance. The only empirical hypothesis concerning system variables that was not supported was the one involving board performance. The general performance of the board did not seem to relate to managerial performance, but there was a slight negative relationship between restrictions placed on the manager by the board and his performance.

Tests of hypotheses related to profit/sales

Only seven of forty empirical hypotheses involving profit/sales (X_{41}) were given support. Only two of the fourteen general hypotheses were supported. The strongest relationships in order were years of management experience, product knowledge, economic knowledge, and employee turnover.

The only significant relationship among socialization factors is experience. Experience had the strongest negative relationship with performance. As indicated earlier, the more experienced manager may employ efficacious techniques that would not show up in the measure of role performance. The social-emotional abilities gained with experience may

have considerable effects on profits through the performance of other actors in the cooperative. If these social-emotional abilities were measured, they would probably be found to correlate negatively with task factors in the study. However, the fact that the measure having the strongest positive correlation with one measure of managerial success has the strongest negative correlation with the other measure is still difficult to understand or explain.

None of the general personality factors that correlated strongly with performance were found to relate to the economic measure. The personality trait of dominance and self-confidence correlated highly with performance, but their correlations with profit/sales are negligible.

Only two of the thirteen empirical hypotheses concerning motivational orientation--managerial rank and attitude toward competition--were given support, but the relationships are so weak they would be of little practical significance.

There were few strong relationships between motivational factors and performance. However, based on past research, one would expect the relationship between employee attitudes and managerial success to be even stronger with profit/sales as a measure of success than it was when performance was used. Yet, this was not found to be the case. Employee attitude measures had relatively strong relationships with performance, but their correlations with profit/sales are negligible.

As was also the case with performance, the strongest, most consistent predictors of success are knowledge measures. However, the strength of relationships is not of the magnitude found with the performance measure. Other cognitive factors had strong relationships with performance, but these same cognitive factors such as education and rational value orientation have negligible correlations with profit/sales. It seems that the only cognitive factors relating at this level to profits of the cooperative are those that have a very direct relationship on economic decision making, i.e. knowledge of products that will sell and be beneficial to farmers, knowledge of margin determination and financial knowledge.

As was also the case with performance no strong relationships between system variables and the managerial success measure were found. Training, managerial power, board performance, board restrictions, and advisor-use all had negligible correlations with profit/sales. The only system factor having a statistically significant relationship with profit/sales was turnover.

As indicated earlier, turnover has long been seen as an important factor in the economic success of virtually any business firm. What is surprising here is that the relationship between turnover and profit is no stronger.

A strong relationship between board performance and economic success was expected, but none was found. This may

have resulted largely from the way board performance was operationally defined. The measure of board performance was essentially a measure of the manager's satisfaction with the actions of his board. Good managers may tend to expect more from their boards, and poor managers may tend to expect less from their boards. A more objective measure of board performance might have produced better results.

The most unexpected finding was the negative relationships between role performance measures and profit/sales. Another measure of role performance investigated in the study but not reported in this thesis in which more emphasis was placed on economic performance of the manager correlated positively but not significantly with profit/sales. However, most of the other measures of performance used in the study also showed the same negative correlation with this and other standardized profit measures.

The profit measures probably tend to reflect both task and social-emotional behavior of the manager, as well as many other factors in the cooperative, whereas the performance measures (based on managers' verbal reports) are more oriented toward task performance. These performance measures may also contain elements of social desirability, a knowledge component--measuring what the manager knows as well as what he does, and a component reflecting communication abilities.

Although the measures of role performance may reflect communication ability and knowledge as well as role

performance, these two factors seem to reflect desirable qualities. The performance measures which reflect activities in certain areas where questions were asked may reflect knowledge and communication ability and still be good general indicators of role performance as long as knowledge and communication abilities are related to higher levels of performance. Thus, if one is interested in measuring managerial role performance as opposed to outcomes of that performance in terms of profit of the cooperative--the way performance was measured in this study may still be better than an employee ranking, superior ranking, board member ranking, judges observing and scoring, etc.

The failure to predict economic success with most of the independent variables employed is further evidence of the problems encountered when attempts are made to predict system performance largely on the basis of characteristics of one actor in that system regardless of how salient an actor he may be. There appear to be too many factors unaccounted for and undoubtedly many interaction effects that cannot be assessed with this size sample.

In summary, considerable success was attained in predicting managerial performance with a number of manager and system characteristics. However, the only characteristics of managers that seem to be predictive of economic success are those that are very pervasive (experience) and those that have a very direct effect on profit (product and economic knowledge). One

other factor may account for these relationships between knowledge and experience and profit that has little to do with relationships with the cooperative; farmers may simply be more inclined to patronize businesses managed by experienced, knowledgeable managers with whom they have long-standing business and personal relationships.

CHAPTER SIX: FINDINGS: MULTI-VARIABLE ANALYSES

Introduction

In addition to the two-variable relationships investigated in the preceding chapter one can deal with situations in which a number of independent variables are considered simultaneously. Although there is considerable theory and research in sociology that can be drawn on in the investigation of two-variable relationships there are few multi-variable models suggested by either theory or past research to be tested by a set of empirical data. Prior to this study, there have been few multi-variable models developed for farmer cooperatives using variables similar to those employed here. Baumel and Fuller (1964) reported on a study in which they investigated some aspects of farmer cooperatives similar to those focused on in this thesis, but they concentrated more on management practices and economic variables.

Two multi-variable analyses have been reported which were developed from data gathered in the research project upon which this thesis is based. Sabri (1969) employed multiple regression and focused on different types of performance in the prediction of revenue. Lee (1969) developed a path model and cross-validated part of it. She employed managerial role performance, revenue, and return on fixed investments as dependent variables. The initial part of the multi-variable analyses to be presented in this thesis will

be concerned with model building. The model building process typically precedes the model testing process in that attempts to inductively construct multi-variable models from a set of data can only be tested as some other set of data is applied to that model.

The multi-variable models to be developed in this chapter will be multiple linear regression equations. Equations will be developed employing manager's role performance as a dependent variable, and then for economic success of the cooperative as a dependent variable.

Two models, one for performance and one for economic success, will be built with one set of measures (the validation set) and tested with an alternate set of measures (the cross-validation set).[1] Wolins states that

> [t]he best set of predictors may be determined from scores derived from the first groups of measures, the regression coefficients and the R^2 values may be unbiasedly estimated (in some sense) from scores derived from those second groups of measures which represent the variables selected for use (Wolins, 1967, pp. 824-825).

As indicated earlier, reliable alternate measures were not available for all the independent variables in this thesis. Because of this, an all-variables model will be tested for both performance and economic success to give

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[1]Measures containing little measurement error (operational measures of experience, education, training, cooperative type, and turnover) are employed in both sets.

an indication of the effect of independent variables that could not be included in the model building procedure.

In the testing of this over-all model and in cross-validating the models that are built, there are two important hypotheses that can be tested. One can hypothesize that the several independent variables considered together will explain some significant part of the variance in the dependent variables will be uniquely related to the dependent variable, or empirically that each variable will have associated with it a significant partial regression coefficient. Although no hypotheses were actually developed, significance levels of t or F on the betas associated with the independent variables, and the significance of the F associated with the over-all equation will be presented for comparison and informative purposes.

Following the presentation of the all-variables models, the results of model building for the prediction of a manager's performance score will be presented. The purpose of the model building was to derive from the data a multi-variable model that would yield a high explanation of variance in the performance score with a minimum number of independent variables, each of which is significantly related to the dependent variable. The stepwise solution technique, a procedure described by Draper and Smith (1966), was used for the model building. The model built by this procedure was then tested using the alternate set of measures. The same

procedure was then followed for the development and cross-validation of a model to predict economic success (profit/sales) of a cooperative.

All-variables Models

The all-variables model--prediction of role performance

All 23 independent variables included in the two-variable hypothesis discussion of performance in the last section were employed as independent variables[1] in the all-variables model used to predict the general performance score (X_{33}). One additional independent variable, cooperative type, was included. This variable was included because the marketing and supply characteristics and the role expectations of managers in Farm Service cooperatives appear to be different from those of other cooperatives in the sample. Farm Service cooperatives were assigned a score of 2 on X_{44}; all other cooperatives were assigned a score of 1.

The computed F value for the all-variables model is 3.2801 with 24 and 70 degrees of freedom. This is significant at the .0001 level of probability. This suggests the existence of a relationship between these independent variables and management performance. Data relevant to this regression are presented in Tables 55 and 56.

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[1]Where alternate measures were available, the composite or most general measure was employed.

Table 55. Analysis of variance for prediction of role performance (X_{33}) with the all-variables model

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Regression	24	3131.4208	130.4759	
Residual	70	2574.6744	36.7811	3.5474
Total	94	5706.0952		

R^2 = .5488 F is significant at the .0001 level
Standard error = 6.06474

An estimate of the management performance score (X_{33}) may be obtained by substituting appropriate values of X_1 through X_{44} in the prediction equation

$$Y = b_0 + b_1X_1 + b_2X_2 + \ldots + b_{44}X_{44}$$

where b_0 is constant and b_1 through b_{44} are respective coefficients presented in Table 56. After solving for the b_0 value, sometimes called the Y intercept, the prediction equation is obtained:

$$\begin{aligned} Y = {} & (-37.4266) + (.3417)X_1 + (1.2327)X_2 + (-.1248)X_3 \\ & + (.0528)X_4 + (.0547)X_6 + (1.3118)X_7 + (.0073)X_{10} \\ & + (-1.2156)X_{11} + (.1020)X_{14} + (.2808)X_{15} + (-1.0861)X_{16} \\ & + (.0641)X_{17} + (.1179)X_{20} + (-.0692)X_{21} + (.2559)X_{24} \\ & + (-.0029)X_{27} + (-.0732)X_{30} + (.6690)X_{34} + (-.0784)X_{35} \\ & + (.1021)X_{36} + (-.1123)X_{37} + (.0718)X_{38} + (.1293)X_{40} \\ & + (7.7148)X_{44} \end{aligned}$$

The R^2 value is .5488 which means that 54.88 percent of the variation in the dependent variable in this equation (manager's role performance) has been explained by the 24 independent variables in the equation.

However, the proportion of variance "explained" is the proportion of the variance explained in the sample used in this study. The proportion of the variance explained in future samples from the same population would probably be less than the mentioned R^2 value and is estimated by the average coefficient of determination,[1] generally known as the "shrunken" R^2 ($\bar{R}^2$). The value of the shrunken R^2 in this case is .3941 which is an estimate of the value of R^2 if the effects of correlated error were eliminated. One criterion for comparing this regression model to others in this thesis is the size of their average coefficients of determination.

Only four of the 24 independent variables have a statistically significant relationship with the dependent variable

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[1]The average coefficient of determination or "shrunken" R^2 provides an estimate of what the value of R^2 would be if the effects of correlated error were eliminated. $\bar{R}^2$ is an estimate of the value of R^2 in the parent population from which the sample was drawn. The values of $\bar{R}^2$ are calculated according to the following formula:

$$\bar{R}^2 = 1 - (1 - R^2) \frac{N - 1}{N - 1 - n}$$

where N is the sample size and n is the number of predictor variables (Dubois, 1957, p. 153).

at the .10 level.[1] Thus, the all-variables model for prediction of performance fails to meet the criterion of a high average coefficient of determination primarily due to the large number of independent variables retained in the model which are not contributing to the explained variance.

The four variables relating to the performance score are self-confidence, managerial rank, board performance, and cooperative type. The zero-order relationship between cooperative type and performance was not reported in the earlier discussion, but it was found to be significantly strong ($r = .4105$). Self-confidence and managerial rank were found to be related significantly to performance in the zero-order analysis, but the board performance variable was not; it was positively related to performance in the zero-order analysis. In the regression analysis its relationship to performance is negative.

Education, manager power, and management experience had fairly strong, but not statistically significant relationships

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[1]Using a two-tailed t test the tabular t necessary for significance at the .10 level with 93 degrees of freedom is 1.662 (Snedecor, 1956, p. 46).

Table 56. Summary of findings for prediction of role performance (X_{33}) with the all-variables model

Variable	Predicted Direction of Beta on Performance[a]	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta
MANAGER'S SOCIALIZATION				
Education				
X-1 education score	+	.3417	.1674	1.6237
Favorable life experiences				
X-2 favorable life experiences score	+	1.2327	.0954	.9644
Job-related socialization				
X-3 years of management experience	+	-.1248	-.1584	-1.6409
MANAGER'S PERSONALITY SYSTEM (GENERAL)				
Interpersonal response traits				
X-4 dominance score #1	+	.0528	.0713	.6295
X-6 achievement score	+	.0547	.0683	.6938
Self-confidence				
X-7 self-confidence score	+	1.3118	.2133	2.3335

[a]The predicted direction is that which might be expected solely on the basis of the two-variable hypothesis. No hypotheses were developed for the direction of regression coefficients; coefficients were tested for statistical significance with a two-tailed test.

Table 56. (Continued)

Variable	Predicted Direction of Beta on Performance[a]	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta
MANAGER'S PERSONALITY SYSTEM (STATUS-ROLE ORIENTATION)				
Motivational orientation				
X-10 profit goal orientation score #3	+	.0073	.0107	.1197
X-11 managerial rank score	-	-1.2156	-.1609	-1.7773
X-14 employee attitude score #3	+	.1020	.1743	1.3974
X-15 perceived power score	+	.2808	.1000	1.0598
X-16 management information score	+	-1.0861	-.0798	-.8398
X-17 job satisfaction score #1	+	.0641	.1091	.9031
X-20 attitude toward competitive situation score	-	.1179	.0351	.3648
Cognitive orientation				
X-21 product knowledge score	+	-.0692	-.0231	-.2039
X-24 economic knowledge score	+	.2559	.1329	1.2789
Rational value orientation				
X-27 rational value orientation score #3	+	-.0029	-.0118	-.0985

Table 56. (Continued)

Variable	Predicted Direction of Beta on Performance[a]	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta
EXTRA-SYSTEM PERFORMANCE				
X-30 organizational participation score #3	+	-.0732	-.0227	-.2203
COOPERATIVE VARIABLES				
Power				
X-34 power score	+	.6690	.1509	1.6176
Training				
X-35 employee training score	+	-.0784	-.0463	-.4500
X-36 management training score	+	.1021	.1317	1.1621
Action of sub-systems				
X-37 board performance score	+	-.1123	-.2196	-1.9278
X-38 board restrictions score	+	.0718	.0247	.2323
Cooperative type				
X-44 cooperative type	+	7.7148	.3421	3.2614
EXTERNAL SYSTEMS				
X-40 advisor-use score	+	.1293	.0216	.2284

to performance.[1] Management experience related negatively to performance as was also the case in the zero-order correlation. Education dropped from a zero-order correlation with performance of .3715 to a standard partial regression coefficient of .1674. The strongest zero-order relationship (dominance) is no longer evident in the partial (b* = .0713). The strong zero-order relationship of the employee attitude variable to performance is also negligible in this regression.

The strong relationships between the knowledge variables and performance are also no longer evident. In fact, product knowledge had a zero-order correlation of .3177 with the performance score, but it's b* is negative. The strong relationship seen at the zero-order level between value orientation and performance is also not evident in this regression.

The cooperative type variable may be partially responsible for some of these changes. Its effect on performance was not assessed along with the two-variable hypotheses, but it is highly correlated both with the performance measure and the

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[1]Relationships referred to in discussion of regression analyses are evaluated by standard partial regression coefficients (b*'s) in which the effects of other independent variables in the equation have been partialed out. Standard partial regression coefficients are computed according to the following formula:

$$b_{yx}^{*} = b_{yx} \cdot \frac{s_x}{s_y}$$

independent variables discussed above; it has apparently obscured their effects on performance in the regression equation.

Due to the possible obscuring of relationships caused by the "type" variable, the decision was made to look at the regression of the performance scores on the 23 independent variables with the "type" variable excluded, i.e., Farm Service cooperatives would be excluded from this sample. The results of this analysis are presented in Tables 57 and 58.

Table 57. Analysis of variance for prediction of role performance (X_{33}) with the all-variables model (Farm Service cooperatives excluded)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Regression	23	2433.9603	105.8244	
Residual	58	1990.6208	34.3210	3.0834
Total	81	4424.5811		

R^2 = .5501 F is significant at the .0001 level
Standard error = 5.8584

The values of regression coefficients are presented in Table 58. After inserting the value for b_0, an estimate of performance may be obtained by substituting appropriate values of X_1 through X_{40} in the following prediction equation:

$$Y = (-39.5167) + (.4165)X_1 + (1.9399)X_2 + (-.1343)X_3$$
$$+ (.0987)X_4 + (.0849)X_6 + (1.169)X_7 + (.0141)X_{10}$$
$$+ (-1.705)X_{11} + (.0664)X_{14} + (.2349)X_{15} + (.3920)X_{16}$$
$$+ (.1401)X_{17} + (.3079)X_{20} + (-.2881)X_{21} + (.2977)X_{24}$$
$$+ (-.0085)X_{27} + (-.0396)X_{30} + (.8233)X_{34} + (.0474)X_{35}$$
$$+ (.1104)X_{36} + (-.1184)X_{37} + (-.1500)X_{38} + (.3361)X_{40}$$

The R^2 value for this equation is .5501, higher than the .5488 obtained with the "type" variable in the equation. However, due to the decreased sample size, the value of $\bar{R}^2$ is .3717, less than the .3941 obtained with the first equation.

The variables that had significant partial regression coefficients in the first all-variables analysis were found to relate significantly to performance again when the Farm Service cooperatives were removed from the analysis. The three variables that came close to having significant beta weights in the first analysis (education, power, and experience) had beta weights that were significant at the .10 level in this analysis.

The relationship between dominance and performance is stronger when the cooperative type variable is removed from the analysis, but the relationship is much weaker than the zero-order relationship between these two variables. The knowledge variables that also had strong zero-order correlations with performance again show little relationship to performance when the type variable is removed. The removal of

Table 58. Summary of findings for prediction of role performance (X_{33}) with the all-variables model (Farm Service cooperatives excluded)

Variable	Predicted Direction of Beta on Performance	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
MANAGER'S SOCIALIZATION				
Education				
X-1 education score	+	.4165	.2213	1.9296
Favorable life experiences				
X-2 favorable life experiences score	+	1.9399	.1555	1.3763
Job-related socialization				
X-3 years of management experience	+	-.1343	-.1813	-1.7296
MANAGER'S PERSONALITY SYSTEM (GENERAL)				
Interpersonal response traits				
X-4 dominance score #1	+	.0987	.1426	1.1550
X-6 achievement score	+	.0849	.1081	.9901
Self-confidence				
X-7 self-confidence score	+	1.1695	.2049	2.0102

[a]The t necessary for significance at the .10 level with 80 degrees of freedom is 1.665 (Snedecor, 1956, p.46).

Table 58. (Continued)

Variable	Predicted Direction of Beta on Performance	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
MANAGER'S PERSONALITY SYSTEM (STATUS-ROLE ORIENTATION)				
Motivational orientation				
X-10 profit goal orientation score #3	+	.0141	.0218	.2179
X-11 managerial rank	-	-1.7050	-.2366	2.3246
X-14 employee attitude score #3	+	.0664	.1193	.8562
X-15 perceived power score	+	.2349	.0893	.8362
X-16 management information score	+	-.3920	-.0313	-.3059
X-17 job satisfaction score #1	+	.1401	.2368	1.8141
X-20 attitude toward competitive situation score	-	.3079	.0998	.9131
Cognitive orientation				
X-21 product knowledge score	+	-.2881	.0960	-.8189
X-24 economic knowledge score	+	.2977	.1599	1.3702
Rational value orientation				
X-27 rational value orientation score #3	+	-.0085	-.0370	-.2810

Table 58. (Continued)

Variable	Predicted Direction of Beta on Performance	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
EXTRA-SYSTEM PERFORMANCE				
X-30 organization participation score #3	+	-.0396	-.0131	-.1171
COOPERATIVE VARIABLES				
Power				
X-34 power score	+	.8233	.2040	1.9273
Training				
X-35 employee training score	+	.0474	.0225	.2081
X-36 management training score	+	.1104	.1555	1.2479
Action of sub-systems				
X-37 board performance score	+	-.1184	-.2350	-1.9156
X-38 board restrictions score	+	-.1500	-.0546	-.4678
EXTERNAL SYSTEMS				
X-40 advisor use score	+	.3361	.0614	.5941

the type variable also had little effect on strengthening the near-zero relationship found between value orientation and performance that was found in the first regression.

In summary, the primary effect of removing the cooperative type variable was to strengthen most of the partial regression coefficients, allowing the independent variables to explain more variance in performance scores than had previously been accounted for by the type variable.

The all-variables model--prediction of economic success

The regression analyses for prediction of the economic success of a cooperative were begun with a model in which 19 of the variables included in the two-variable hypothesis discussion were employed as independent variables.

The dummy variable for cooperative type was again included. The dependent variable predicted was total profit/sales for the years 1964-1965 (X_{41}).

In the all-variables model developed for prediction of performance, all the independent variables included in the two-variable hypothesis discussion were used. This was not the case in the development of the present model, for many of the independent variables were assumed not to affect economic success directly, but only indirectly through managerial performance. Those variables that were assumed to have effects on economic success other than through managerial performance as operationally defined in this thesis were included in this

all-variables model. These relationships were included in the discussion preceding the presentation of the hypotheses relating to economic success in the Derivation of Hypotheses chapter.

The computed F value for the all-variables model is 3.8413 with 20 and 74 degrees of freedom. This is significant at the .0001 level of probability. This finding suggests the existence of a relationship between these independent variables and the economic success of a cooperative. Data relevant to this regression are presented in Tables 59 and 60.

Table 59. Analysis of variance for prediction of profit/sales (X_{41}) with the all-variables model

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Regression	20	.023197	.001160	
Residual	74	.022343	.000302	3.8413
Total	94	.045540		

R^2 = .5094 F is significant at the .0001 level
Standard error = .017378

The values of regression coefficients are presented in Table 60. After inserting the value for b_0, an estimate of profit/sales may be obtained by substituting appropriate values of X_3 through X_{44} in the following prediction equation:

$$Y = (-.048481) + (.000304)X_3 + (-.000204)X_4 + (-.000113)X_{10}$$
$$+ (-.004502)X_{11} + (.000119)X_{14} + (.000023)X_{17}$$
$$+ (-.000404)X_{20} + (.000659)X_{21} + (.001493)X_{24}$$
$$+ (.000012)X_{27} + (.000285)X_{30} + (-.001110)X_{33}$$
$$+ (.001836)X_{34} + (-.000443)X_{35} + (.000172)X_{36}$$
$$+ (-.000109)X_{37} + (.000144)X_{38} + (-.010462)X_{39}$$
$$+ (.000091)X_{40} + (.038930)X_{44}$$

The R^2 value for this equation is 0.5094 which means that 50.94 percent of the variation in the dependent variable in this equation (profit/sales) has been explained by the 20 independent variables in the equation. However, the value of the shrunken R^2 is 0.3768. Only four of the 19 independent variables have statistically significant relationships with profit/sales at the .10 level. Thus, as was also the case in prediction of performance, the all-variables model falls short of meeting the criteria of a high average coefficient of determination. An important contributing factor to the low average coefficient of determination is again the large number of independent variables retained in the model which are not contributing to the explained variance.

The four variables relating to profit/sales are managerial rank, economic knowledge, cooperative type, and role performance. As was the case in the zero-order findings the relationship between role performance and profit/sales is negative--not in the predicted direction. Of these four variables, only

Table 60. Summary of findings for prediction of profit/sales (X_{41}) with the all-variables model

Variable	Predicted Direction of Beta on Profit/ Sales	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
MANAGER'S SOCIALIZATION				
Job-related socialization				
X-3 years of management experience	+	.000304	.1366	1.4402
MANAGER'S PERSONALITY SYSTEM (GENERAL)				
Interpersonal response traits				
X-4 dominance score #1	+	-.000204	-.0977	-.8672
MANAGER'S PERSONALITY SYSTEM (STATUS-ROLE ORIENTATION)				
Motivational orientation				
X-10 profit goal orientation score #3	+	-.000113	-.0581	-.6456
X-11 managerial rank	-	-.004502	-.2109	-2.3055
X-14 employee attitude score #3	+	.000119	.0721	.6107
X-17 job satisfaction score #1	+	.000023	.0136	.1146

[a]The t necessary for significance at the .10 level with 93 degrees of freedom is 1.662 (Snedecor, 1956, p.46).

Table 60. (Continued)

Variable	Predicted Direction of Beta on Profit/ Sales	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
X-20 attitude toward competitive situation score	-	-.000404	-.0425	-.4446
Cognitive orientation				
X-21 product knowledge score	+	.000659	.0778	.7303
X-24 economic knowledge score #3	+	.001493	.2743	2.6924
Rational value orientation				
X-27 rational value orientation score #3	+	.000012	.0174	.1501
EXTRA-SYSTEM PERFORMANCE				
X-30 organizational participation score #3	+	.000285	.0313	.3112
COOPERATIVE VARIABLES				
Power				
X-34 power score	+	.001836	.1466	1.5896
Training				
X-35 employee training score	+	-.000443	-.0927	-.9098
X-36 management training score	-	.000172	.0784	.7425

Table 60. (Continued)

Variable	Predicted Direction of Beta on Profit/ Sales	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
Action of sub-systems				
X-37 board performance score	+	-.000109	-.0755	-.6736
X-38 board restrictions score	+	.000144	.0175	.1663
X-39 employee turnover	-	-.010462	-.0993	-1.1144
Cooperative type				
X-44 cooperative type	+	.038930	.6111	5.6198
EXTERNAL SYSTEMS				
X-40 advisor-use score	+	-.000091	.0054	.0588
MANAGER'S ROLE PERFORMANCE				
X-33 role performance	+	-.001110	.3929	-3.4853

managerial rank also related significantly to performance in the regression analysis, although the relationship between economic knowledge and performance was relatively high and positive.

The zero-order correlations between these four variables and profit/sales were also significant. The zero-order relationship between cooperative type and profit/sales was not reported in the earlier discussion, but it was found to be significantly strong ($r = .7427$). This relationship was to be expected, since certain data needed to compute profit/sales for the Farm Service cooperatives (discussed earlier) were not available, and their omission in the computations had the effect of enhancing the profit figures for this one type of cooperative.

As was the case in the first performance regression, manager power and management experience had fairly strong, but not statistically significant relationships to profit/sales. The relationship between power and profit/sales was in the same direction as in the performance analysis. However, the relationship between experience and profit/sales was positive, while the relationship between experience and performance was negative. Management experience had the highest zero-order correlation with profit/sales ($r = .3186$); this dropped to a b^* in this analysis of only .1366. Manager power did not correlate strongly with profit/sales in the zero-order analysis

(r = .0571) but its b* in this analysis is .1466. The variable having the second strongest zero-order correlation with profit/sales (product knowledge--r = .2847) has a non-significant b* in this regression of .0778.

The cooperative type variable may again be obscuring relationships due to its strong relationship to the dependent variable and a number of independent variables. As was the case with the performance regressions the decision was made to sacrifice some sample size to look at the relationships among variables with the Farm Service cooperatives excluded from the analysis. Thus, profit/sales was regressed on the same set of independent variables included in the first prediction equation with the "type" variable excluded. The results of this analysis are presented in Tables 61 and 62.

Table 61. Analysis of variance for prediction of profit/sales (X_{41}) with the all-variables model (Farm Service cooperatives excluded)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Regression	19	.008334	.000439	
Residual	62	.012090	.000195	2.2494
Total	81	.020424		

R^2 = .40805 F is significant at the .01 level
Standard error = .013964

The values of regression coefficients are presented in Table 62. After inserting the value for b_0, an estimate of profit/sales may be obtained by substituting appropriate values of X_3 through X_{40} in the following prediction equation:

$$Y = (.000760) + (.000402)X_3 + (-.000211)X_4 + (-.000210)X_{10} + (-.002871)X_{11} + (.000053)X_{14} + (-.000206)X_{17} + (.000056)X_{20} + (.001973)X_{21} + (.001155)X_{24} + + (-.000017)X_{27} + (.000163)X_{30} + (-.000716)X_{33} + (.001323)X_{34} + (.000224)X_{35} + (.000066)X_{36} + (-.000059)X_{37} + (.000780)X_{38} + (-.010777)X_{39} + (.000423)X_{40}$$

The R^2 value for this equation is .40805, considerably less than the .5094 obtained with the type variable in the equation. The $\bar{R}^2$ is only .2266. The combined effect of deleting the "type" variable and lowering the sample size has reduced the $\bar{R}^2$ value considerably. The independent variables included in the equation do not do a good job of predicting profit/sales. The attempts to predict performance with the all-variables equation were considerably more successful.

Of the three variables in this equation that had significant partial regression coefficients in the first all-variables analysis, manager rank was found not to relate significantly to profit/sales when the Farm Service cooperatives were removed from the analysis. Of the two variables that came close to having significant beta weights in the first analysis,

Table 62. Prediction of profit/sales (X_{41}) with the all-variables model (Farm Service cooperatives excluded)

Variable	Predicted Direction of Beta on Profit/ Sales	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
MANAGER'S SOCIALIZATION				
Job-related socialization				
X-3 years of management experience	+	.000402	.252377	2.2153
MANAGER'S PERSONALITY SYSTEM (GENERAL)				
Interpersonal response traits				
X-4 dominance score #1	+	-.000211	-.142006	-1.0498
MANAGER'S PERSONALITY SYSTEM (STATUS-ROLE ORIENTATION)				
Motivational orientation				
X-10 profit goal orientation score #3	+	-.000210	-.151309	-1.3981
X-11 managerial rank	-	-.002871	-.185466	-1.6039
X-14 employee attitude score #3	+	.000053	.044564	.3197
X-17 job satisfaction score #1	+	-.000206	-.162301	-1.1545

[a]The t necessary for significance at the .10 level with 80 degrees of freedom is 1.665 (Snedecor, 1956, p. 46).

Table 62. (Continued)

Variable	Predicted Direction of Beta on Profit/ Sales	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
X-20 attitude toward competitive situation score	-	.000056	.008435	.0724
Cognitive orientation				
X-21 product knowledge score	+	.001973	.305898	2.4977
X-24 economic knowledge score #3	+	.001155	.288583	2.3742
Rational value orientation				
X-27 rational value orientation score #3	+	-.000017	-.034783	-.2503
EXTRA-SYSTEM PERFORMANCE				
X-30 organizational participation score #3	+	.000163	.025208	.2124
COOPERATIVE VARIABLES				
Power				
X-34 power score	+	.001323	.152536	1.3021
Training				
X-35 employee training score	+	.000224	.049582	.4166
X-36 management training score	-	.000066	.043534	.3441

Table 62. (Continued)

Variable	Predicted Direction of Beta on Profit/ Sales	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta[a]
Action of sub-systems				
X-37 board performance score	+	-.000059	-.054270	-.4075
X-38 board restrictions score	+	.000780	.132221	1.0504
X-39 employee turnover	-	-.010777	-.146486	-1.3679
EXTERNAL SYSTEMS				
X-40 advisor-use score	+	.000423	.035917	.3319
MANAGER'S ROLE PERFORMANCE				
X-33 role performance	+	-.000716	-.333310	-2.5127

only management experience had a beta weight significant at the .10 level in this analysis.

Product knowledge which had a high zero-order correlation with profit/sales, but a low b* in the first regression analysis was significantly related to profit/sales in this analysis. However, the removal of the type variable had little effect on strengthening the relationship between profit/sales and any of the other independent variables.

In summary, the effect of removing the cooperative type variable was not as dramatic as was the case when it was removed from the performance equation. The basic effect of it removal was a considerable drop in the R^2.

Model Building

The stepwise regression models

As expected, the all-variables models yielded a fairly high explanation of variance in the dependent variables. However, the large number of independent variables explaining little variance led to a considerable gap between the variance explained (R^2) and the variance one would expect to explain in a new sample ($\bar{R}^2$). It was hoped that the average coefficients of determination ($\bar{R}^2$) might be increased through a model building technique in which only independent variables significantly related to the dependent variables were included in the models.

One procedure for regression model building is the stepwise regression technique. It is a type of forward solution in which variables are systematically added to the model. The objective is to retain in the model only variables which significantly contribute to explained variance while achieving a high $\bar{R}^2$ value. Draper and Smith (1966, pp. 171-172) outline the following steps for this procedure:

> Step 1. The stepwise procedure starts with the simple correlation matrix and enters into regression the X variable most highly correlated with the response.
>
> Step 2. Using the partial correlation coefficients...it now selects, as the next variable to enter regression, that X variable whose partial correlation with the response is the highest.
>
> Step 3. The partial t test for both variables is calculated as though each variable had been added last. In this manner, variables which have entered the regression may later be eliminated as additional variables are entered.
>
> Step 4. The procedure terminates when the X variable whose partial correlation with the response is highest does not yield a significant t test, or no variables remain.

Building the performance model

The stepwise procedure was applied to the validation set of measures.[1] The procedure was designed to add variables

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[1]Variables included in the validation set are X_1, X_3, X_4, X_8, X_{12}, X_{18}, X_{22}, X_{25}, X_{28}, X_{31}, X_{35}, X_{36}, X_{39}, X_{42}, and X_{44}.

until the partial F test of the last variable added was less than 1.669, the tabular F value at the .20 level of significance.[1] Previously added variables could also be eliminated if their partial F test value fell below 1.669. By this procedure a stepwise solution composed of six variables was obtained. The six variables included are: dominance (X_4), cooperative type (X_{44}), education (X_1), economic knowledge (X_{22}), manager training (X_{36}), and value orientation (X_{25}).

In this first stepwise analysis, the seventh variable to be added, management experience (X_3), had a partial F test of less than 1.669, and thus was not added into the equation. The six variables comprising the regression equation yield an R^2 value of .3519 and an $\bar{R}^2$ value of .3077. This $\bar{R}^2$ is less than the average coefficient of determination obtained with the all-variables model. Thus, the stepwise technique did not meet the objective of raising the average coefficient of determination by excluding variables from the model that do not contribute significantly to the explained variance in the performance score.

Table 63 shows the variables in the order of their entry into the equations and the respective standard partial regression coefficients.

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[1]The .20 level was used so that no potentially useful variables would be excluded at this stage. The wisdom of including variables with low t values can be assessed at the cross-validation stage.

Table 63. Stepwise solution for performance (X_{31}) standard partial regression coefficients

Variables		Regression Equations					
		1	2	3	4	5	6
X_4	Dominance	.4050	.3344	.3072	.2486	.2583	.2448
X_1	Education		.2592	.2362	.2124	.1826	.1687
X_{44}	Cooperative type			.2190	.2099	.2068	.2048
X_{22}	Economic knowledge				.1979	.1801	.1662
X_{36}	Management training					.1580	.1526
X_{25}	Rational value orientation						.1404

Changes in other parameters of the regression equations calculated in the stepwise procedure are shown in Table 64. In this table one can see the changes in the cumulative size of the R^2 and $\bar{R}^2$ values, and the additional R^2 for the last variable entered.

Table 64. Changes in characteristics of the regression equations in the stepwise solution for performance (X_{31})

Variable Entered	Cumulative R^2	Additional R^2 for Last Variable	Cumulative $\bar{R}^2$
X_4 Dominance	.1640	.1640	.1550
X_1 Education	.2312	.0672	.2145
X_{44} Cooperative type	.2776	.0464	.2538
X_{22} Economic knowledge	.3116	.0340	.2810
X_{36} Management training	.3334	.0218	.2959
X_{25} Rational value orientation	.3519	.0185	.3077

In Table 65 the six variables are ranked in order of importance based on the size of their respective standard beta coefficients.

The effort to raise the average coefficient of determination with the stepwise technique was unsuccessful. The $\bar{R}^2$ obtained with the all-variables model (.3941) was considerably

Table 65. Stepwise solution for performance (X_{31})--standard beta coefficients

Variable	Standard Beta Coefficient
X_4 Dominance	.2448
X_{44} Cooperative type	.2048
X_1 Education	.1687
X_{22} Economic knowledge	.1662
X_{36} Management training	.1526
X_{25} Rational value orientation	.1404

higher than that obtained with the stepwise procedure (.3077). However, in the stepwise solution, each independent variable explains a significant amount of variance in the performance score. Each variable added in the stepwise equation provided a smaller increase in the R^2 than the one preceding it. The increase in predictive power with the addition of another variable to the equation would probably not be great.

A notable characteristic of this solution is that all the variables included relate to the performance score in the direction hypothesized for the zero-order relationships. All of the variables had significant zero-order correlations with performance, and all the correlations but the one between management training and performance were relatively high. These relationships were not evident in the first all-variables regression (except for cooperative type), nor were they evident

in the second all-variables regression (except for education).

Six variables that were significantly related to performance in the all-variables regression were not included in the stepwise solution. Management experience (X_3) which related negatively to performance in the all-variables model would have been the next variable entered in the stepwise solution. There were no alternate measures available for all but one of the other independent variables that were significantly related to performance in the all-variables regression. Since no alternate measures of these variables could be used in cross-validation, they were excluded from the stepwise analysis. Although many of these excluded variables had high correlations with dominance which may have caused their partial regression coefficients with performance to be negligible, their inclusion in the stepwise procedure might have yielded an $\bar{R}^2$ close to that obtained with the all-variables model.

Cross-validation of the performance model

The model for prediction of performance that was developed by the stepwise technique employing the measures in the validation set was tested on the second set of measures (the cross-validation set).[1] Manager training (X_{36}) and cooperative type

[1]The variables included in the cross-validation set were: X_1, X_3, X_5, X_9, X_{13}, X_{19}, X_{23}, X_{26}, X_{29}, X_{32}, X_{35}, X_{36}, X_{39}, X_{43}, and X_{44}. Six variables in the validation set which contained little measurement error (X_1, X_3, X_{35}, X_{36}, X_{39}, and X_{44}) were also included in the cross-validation set.

(X_{44}) did not have significant t values (at the .20 level) in the prediction of the second measure of performance (X_{32}). The relationship between the other four independent variables and performance found in the first model was cross-validated. The results of this analysis are reported in Table 65.

The six variables included in the cross-validation analysis yield an R^2 of .38245. As indicated before, Wolins (1967) states that the R^2 can be unbiasedly estimated from scores derived from the second set of measures. Thus, the $\bar{R}^2$ obtained with the validation set would be expected to be comparable to the R^2 obtained with the cross-validation set. However, the R^2 in the cross-validation (.3824) was not only higher than the $\bar{R}^2$ in the stepwise (.3077), but higher than the stepwise R^2 (.3519) as well. This may have resulted in part from the fact that three of the six independent variables in the stepwise solution were measured with low measurement error and these measures were also included in the cross-validation.

Table 66. Summary of findings for prediction of role performance (X_{32}) in the cross-validation of the stepwise model

Variable	Predicted Direction of Beta on Performance	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta
X_5 Dominance	+	.3723	.1515	1.5407
X_{44} Cooperative type	+	1.5895	.0899	1.0345
X_1 Education	+	.2921	.1826	1.9095
X_{23} Economic knowledge	+	.6545	.2442	2.7246
X_{36} Management training	+	-.0232	-.0381	-.4342
X_{26} Rational value orientation	+	.0891	.3020	3.0840

Building the profit/sales model

Procedures similar to those employed in the development and testing of the performance model discussed above were followed in model building with profit/sales as the dependent variable. Profit/sales 1964 (X_{42}) was used as the dependent variable in the stepwise regressions. The second standardized measure of profit (profit/sales 1965--X_{43}) was used as the dependent variable in the cross-validation analysis. The same independent variables were used as were employed in the stepwise analysis of performance.

A stepwise solution composed of five variables was obtained. The five variables included are: management experience (X_3), employee attitude (X_{12}), profit goal orientation (X_8), economic knowledge (X_{22}), and cooperative type (X_{44}). The sixth variable to be added, manager training (X_{36}), had a partial F test of .7096, less than the 1.669 criterion for entry into the equation. The five variables in the equation yield an R^2 value of .3669 and an $\bar{R}^2$ value of .3313. As was the case with the building of the performance model, this $\bar{R}^2$ is less than the $\bar{R}^2$ computed with the all-variables model.

Table 67 shows the variables in the order of their entry into the equations and the respective standard partial regression coefficients.

Table 67. Stepwise solution for profit/sales (X_{42}) standard partial regression coefficients

Variables	Regression Equations 1	2	3	4	5
X_{44} Cooperative type	.4406	.4147	.3822	.4325	.4247
X_3 Management experience		.2284	.2761	.2534	.2629
X_{22} Economic knowledge			.2501	.2469	.2460
X_{12} Employee attitude				-.2021	-.2325
X_8 Profit goal orientation					-.2295

Changes in other parameters of the regression equations calculated in the stepwise procedure are shown in Table 68. In this table one can see the changes in the cumulative size of the R^2 and $\bar{R}^2$ values, and the additional R^2 for the last variable entered.

In Table 69 the five variables are ranked in order of importance based on the size of their respective standard beta coefficients.

As indicated, the average coefficient of determination obtained was less than that obtained with the all-variables solution, and the largest contribution to the $\bar{R}^2$ was the effect of cooperative type. Only two of the four remaining variables in the model (management experience and economic knowledge) had significant zero-order correlations with

Table 68. Changes in characteristics of the regression equations in the stepwise solution for profit/sales (X_{42})

Variable Entered	Cumulative R^2	Additional R^2 for Last Variable	Cumulative $\bar{R}^2$
X_{44} Cooperative type	.1941	.1941	.1854
X_3 Management experience	.2461	.0520	.2297
X_{22} Economic knowledge	.3058	.0597	.2829
X_{12} Employee attitude	.3446	.0388	.3155
X_8 Profit goal orientation	.3669	.0223	.3313

Table 69. Stepwise solution for profit/sales (X_{42}) standard beta coefficients

Variable	Standard Beta Coefficients
X_{44} Cooperative type	.4247
X_3 Management experience	.2629
X_{22} Economic knowledge	.2460
X_{12} Employee attitude	-.2325
X_8 Profit goal orientation	-.2295

profit/sales, and these are the only two variables having relationships to profit/sales in the direction hypothesized for the zero-order relationships.

The relationships between experience and economic knowledge and profit/sales were evident in the all-variables regression analysis. Employee attitudes and goals had positive beta weights in the first all-variables regression, but they were found to be negatively related to profit/sales in this stepwise analysis.

Only two other variables (product knowledge and role performance) not included in the stepwise solution were significantly related to profit/sales in the all-variables solution. Of these, no alternate measure of product knowledge was employed in this study because of low reliability. Role performance was not significantly related to the second measure of profit/sales, although it had significant, and negative, t values in both all-variables equations.

Cross-validation of the profit/sales model

The model for prediction of profit/sales that was developed by the stepwise technique employing the validation set of measures was tested on the cross-validation set of measures. Only two of the five variables in this model met the criterion of a t value on beta being significant at the .20 level. Management experience (X_3) and cooperative type (X_{44}) were the only two variables to survive this test. The results of this analysis are reported in Table 70.

As was the case in building the performance model, two variables in the stepwise solution were measured with low

measurement error and the measures of these two variables (cooperative type and management experience) were also included in the cross-validation. Thus, it was anticipated that the R^2 in the cross-validation would be somewhat higher than the $\bar{R}^2$ reliability estimate from the stepwise analysis. However, this was not the case. The R^2 in the cross-validation (.2940) was considerably less than the $\bar{R}^2$ (.3313) in the stepwise model. The $\bar{R}^2$ in the cross-validation was .2543.

Only cooperative type and experience had significant t values in the cross-validation. Considering the fact that, due to the difference in profit computations, there is a "built-in" relationship between type and profit/sales, the only remaining variable with any predictive significance in this cross-validation is years of management experience. Although the relationship between economic knowledge and profit/sales found with this second set of measures is not significant at the .20 level, it could probably be included with cooperative type and experience in a prediction equation on the basis of its consistent relationship with profit/sales in the zero-order correlations and the other two regressions.

The only analysis in which employee attitude and profit goal orientation were shown to be related to profit/sales was the stepwise. The direction of their relationship to profit/sales was reversed in the cross-validation analysis.

Table 70. Summary of findings for prediction of profit/sales (X_{43}) in the cross-validation of the stepwise model

Variable	Predicted Direction of Beta on Profit/ Sales	Regular Partial Regression Coefficient	Standard Partial Regression Coefficient	t Value on Beta
X_{44} Cooperative type	+	.028947	.4427	4.8395
X_3 Management experience	+	.000433	.1895	2.0731
X_{23} Economic knowledge	+	.001018	.1026	1.1058
X_{13} Employee attitude	-	.000190	.0745	.8173
X_9 Profit goal orientation	-	.000223	.0656	.7146

Discussion and Summary

The focus of this chapter was on building and testing multiple regression models that would be useful in predicting role performance of managers and economic success of cooperatives (as measured by profit/sales). An all-variables model for performance, composed of the independent variables used in the two-variable hypotheses, was investigated first. This was done so the effect on performance of all the independent variables discussed earlier could be assessed. The effect of the inclusion of Farm Service cooperatives was controlled in the first all-variables regression by using a dummy variable. The dummy variable seemed to be obscuring other relationships so the all-variables analysis was re-run, excluding the Farm Service cooperatives and the dummy variable. This process was then repeated for profit/sales as the dependent variable.

A model to predict performance was then built with stepwise regression employing the first of two sets of alternate measures. It was then cross-validated using the second set of measures. This procedure was repeated using profit/sales as the dependent variable.

Certain criteria to evaluate these models have been discussed throughout the chapter, these criteria are summarized below, and new criteria are added. The all-variables and stepwise models will be reviewed and evaluated first for performance, and then for profit/sales using the following criteria:

predictive power of independent variables taken together, predictive power of separate independent variables, reliability, validity, and subjective factors.

Only the all-variables models containing the "type" variable and the stepwise cross-validation models will be compared. Evaluation of the performance models will be undertaken first.

1. Predictive and explanatory power of independent variables taken together:
   a. R^2: The R^2 obtained with the all-variables model is .5488, considerably higher than the .3825 obtained with the cross-validation.
   b. F ratio: The F ratio for the all-variables model was 3.5474, the F ratio for the cross-validation model is 9.0832, much higher than that obtained with the all-variables model.
   c. Variance explained per variable used: The variance explained in the performance score per variable used was almost three times greater for the cross-validation model than for the all-variables model.
2. Predictive and explanatory power of separate independent variables:
   a. Most important variables: The most important variables in the all-variables solution were self-confidence, managerial rank, board performance, and

cooperative type. Of these, only cooperative type was included in the stepwise solution where it explains more variance than four of the other five variables in the model. Both self-confidence and managerial rank from the all-variables model have high zero-order correlations with dominance, which explains the most variance in the cross-validation model.

b. High relative contributions: In the all-variables model self-confidence and cooperative type had high relative contributions. In the cross-validation solution dominance and cooperative type had high relative contributions.

3. Reliability:

a. The average coefficient of determination was higher for the all-variables model than for the stepwise model, but only slightly higher than the R^2 obtained in the cross-validation.

b. The confidence placed in the F test for the all-variables model is low because there are many conditional probabilities in the model with so many variables, and the F tables are not conditional.

4. Validity:

All the variables in the cross-validation model relate to performance in the direction hypothesized on the basis of theory for the two-variable, zero-order

relationships. This is not the case for all the statistically significant relationships in the all-variables model.

5. Subjective factors:
   a. Expense and difficulty of data collection would be considerably less with the stepwise model.
   b. From a theoretical standpoint, the stepwise equation seems more plausible than the all-variables equation.
   c. Maintenance of the stepwise model would be simpler due to the smaller number of variables.

Attention will now be directed to evaluation of the profit/sales models.

1. Predictive and explanatory power of the independent variables taken together:
   a. R^2: The R^2 obtained with the all-variables model is .5094, considerably higher than the .2940 obtained with the cross-validation.
   b. F ratio: The F ratio for the all-variables model is 3.8413, the F ratio for the cross-validation model is 7.4115, much higher than that obtained with the all-variables model.
   c. Variance explained per variable used: The variance explained per variable used was less than twice as much for the cross-validation model as the all-variables solution (considerably less than the difference

found between the performance models).

2. Predictive and explanatory power of separate independent variables:

   a. Most important variables: The most important variables in the all-variables solution were cooperative type, role performance (relating negatively to profit/sales), economic knowledge, and managerial rank. Managerial rank was not included in the stepwise analysis. Of the remaining variables, both cooperative type and economic knowledge were included in the stepwise solution. Management experience, which related positively to profit/sales in the second all-variables regression, was included in the stepwise solution with experience and cooperative type being the most important variables in the cross-validation.

   b. High relative contributions: In the all-variables model cooperative type, role performance, and economic knowledge had the highest relative contributions, with role performance relating negatively to profit/sales. In the cross-validation model only cooperative type had a high relative contribution.

3. Reliability:

   a. The average coefficient of determination was much higher for the all-variables model than for the stepwise model, and higher than the R^2 obtained in the

cross-validation model.

b. The confidence placed in the F test for the all-variables model is low because there are many conditional probabilities in the model.

4. Validity:

The two significant variables and economic knowledge in the stepwise solution relate to profit/sales in the direction hypothesized for the two-variable zero-order relationships. This is not the case for all the statistically significant relationships in the all-variables model.

5. Subjective factors--the same comments can be made here as were made for the performance models.

CHAPTER SEVEN: FINDINGS: NETWORK ANALYSIS

Introduction

Multi-variable analysis procedures that allow the researcher to deal with the complex network of direct and indirect relationships that exist among a set of variables have given the sociologist the opportunity to gain new insights into his data. In performing this type of analysis, the researcher begins with a set of variables, frequently an inventory of independent variables and a dependent variable, and considers all possible relationships among the variables included in the set.

One approach to network analysis is the causal inference technique that Blalock (1964, 1968) presents. A second major approach is the path analysis technique (Boudon, 1965; Duncan, et al., 1968; Blau and Duncan, 1967; and Land, 1968), which is an application of the original work of Sewell Wright (1921; 1934) in genetics.

The path analysis technique applies to a set of relationships among variables which are linear, additive, and causal with variables measurable on an interval scale (Land, 1968, p.5). There are two types of variables in a causal system--exogenous and endogenous. Exogenous variables are assumed to be determined by variables outside of the set being considered; endogenous variables are assumed to be determined by some combination of exogenous and endogenous variables

included in the model. An unmeasured residual variable can be introduced when an endogenous variable is not completely determined by variables in the model.

The hypothesized relationships among a set of variables can be represented by a recursive system of regression equations when all the causal relationships in the set are assumed to be unidirectional.[1] A regression equation is written for each endogenous variable in the set of relationships, in which it is treated as a dependent variable and all other variables hypothesized to be causally related to it are entered as independent variables.

The direct effect of an independent variable on a dependent variable is assessed with a path coefficient. Land (1968. pp. 12-13) indicates that a path coefficient (p_{ij}) is identical to the least squares estimator of the standardized partial regression coefficient (b_{ij}^*). By solving the set of recursive equations, and standardizing the raw partial regression coefficients obtained, an estimate of the path coefficients may be obtained.

The relationships represented by a set of recursive equations can be shown visually in a path diagram. Land

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[1] In non-recursive systems involving simultaneous determination, or feedback effects, path analysis would not be appropriate. Duncan, et al. (1968) discuss the analysis of models involving reciprocal relationships.

(1968, pp. 6-7) reviews the following conventions for the construction of path models:

1. An hypothesized causal relationship is shown by a unidirectional arrow extending from a determining variable to a dependent variable.
2. An hypothesized noncausal relationship between exogenous variables is shown by a two-headed curved arrow.
3. Each residual variable is related to its respective dependent variable by a unidirectional arrow. Literal subscripts are attached to the residual variables to indicate that they are unmeasured variables.
4. The numerical value of the path coefficient is entered beside the unidirectional arrow to which it corresponds. The value of the correlation coefficient may also be added to its corresponding two-headed curved arrow.

These conventions will be followed with the exception of t values being inserted beside arrows on the validation model that is developed from the first set of measures. This was done because emphasis in the first step is on whether or not to include certain paths, with the estimation of coefficients being left to the cross-validation model.

The purpose of this chapter is to apply the path analysis technique to the cooperative manager data in an effort to understand network relationships. This analysis will differ from the regression analyses in that the effects of independent variables on each other will be considered in addition to their effects on a dependent variable. The first objective will be to identify the form of the network of relationships that exist. This will be done by developing a path model and cross-validating it. One set of indicators (the validation set) will be used to determine the variables and paths to maintain in a postulated path model. A second set of indicators (the cross-validation set) will be used to test the model refined with the first set of measures. The second objective will be to analyze this network into the direct and indirect effects of which it is composed.

Preliminary Steps for Path Analysis

Selecting the variables

The initial step in the path analysis procedure is to determine the variables that will be included in the set. The basic objective in this chapter is similar to that of the preceding chapter, i.e. to develop a model with one set of measures and cross-validate it with another set. Thus, the same sets of variables that were used in the stepwise regressions were employed in the path analyses.

Although the same sets of data were used, the criteria for relationships among variables are considerably different for the two approaches to model building. One criterion for achieving a predictive regression equation is that the independent variables be highly correlated with the dependent variable while being relatively uncorrelated with themselves. Thus, the stepwise solutions previously discussed yielded a set of variables which do not form as complete a network of relationships among themselves as would be expected in a path model. One may view the regression model building techniques as instrumental in achieving the objective of prediction, whereas, path analysis is viewed as instrumental in achieving explanation of relationships among variables in a network. Given this basic difference it would not be surprising if the sets of variables resulting from the regression and path model building attempts were somewhat dissimilar.

Assumptions regarding the variables

Warren (1971) lists three assumptions about the model specifying causal relationships:

1. Relationships of variables are linear, additive, and asymmetric.
2. Cause variables and effect variables are specified.
3. All relevant variables are included in the model. Each dependent variable is assumed to be completely

determined by some combination of variables in the path model. Where the assumption of complete determination by explicit variables does not hold, a residual variable that is uncorrelated with the other variables must be introduced.

Warren goes on to list the following assumptions about variables:

1. Measures are valid.
2. Measurement of variables is on interval or ratio scales or a reasonable approximation.
3. The measures should be highly reliable. Measurement errors in all variables should be small. Since most of the predictor variables in this study contain measurement error, the first path model developed was cross-validated with an alternate set of measures, following Wolins' suggestion discussed earlier (Wolins, 1967, p.826).

Two assumptions about the multi-variate analysis must be made:

1. Residual variables are assumed to be uncorrelated with the other determinants.
2. Multiple regression assumptions should be met. The extent to which data in this analysis satisfy these assumptions was discussed in the Methods chapter.

An assumption about sample size must also be made. Because of the problem of sampling error a relatively large sample

is needed. a sample of 200 or more is preferable. The sample size in this study (95) would be considered by most experts to be an absolute minimum for path analysis.

Ordering the variables

The next step in path analysis requires assumptions about the general causal ordering of the variables included in the analysis. Few theoretical or empirical guidelines for establishing a causal ordering are available. Most theoretical discussions deal only with an inventory of determinants related to some common result. There is little axiomatic theory relating concepts in a cumulative manner. Most empirical work has dealt with two-variable relationships, or the partial relationships between independent variables and dependent variables. Thus, the application of path analysis to any substantive area in sociology must proceed partially based on the best judgment of the researcher.

The application of path analysis to social-psychological variables is particularly difficult because of the lack of a clear time sequence. Thus, the assumption of asymmetricity is frequently in doubt when dealing with these types of data. Nevertheless, to proceed one must assume a causal ordering of variables a priori.

The variables comprising the validation and cross-validation sets which will be used in the path analysis were discussed in the preceding chapter. They are:

dominance, education, management experience, profit goal orientation, values, cooperative type, management training, employee attitude, economic knowledge, employee training, organizational participation, job satisfaction, performance, turnover, and profit/sales. A discussion of the relationships between these variables and performance and profit/sales has been discussed in previous chapter. A lengthy discussion of past research and theory concerning relationships among the remaining variables is beyond the scope of this thesis. Thus, certain assumptions will be made concerning relationships, but no documentation will be given.

An individual's general personality characteristics are expected to affect most of the other variables to be considered. Factors such as education in a manager's general socialization are also assumed to have a pervasive effect on his status-role orientation. Management experience is also seen as coming causally prior to the manager's status-role orientation.

Within the manager's status-role orientation the more general factors such as goals and values may be initially affected by general personality factors and are then modified by situational exigencies. These general orientations are expected to guide the development of more specific cognitive and attitudinal factors. These cognitive and attitudinal factors are assumed to be the major forces behind a manager's

performance both within and outside of the cooperative. The manager's performance is then seen as affecting the performance of his employees which in turn has an ultimate effect on the profits of the cooperative. A more specific discussion of all the hypothesized causal relationships will now be undertaken.

Dominance A manager's general personality trait of dominance is expected to affect all factors involving power or leadership (Leary, 1957). This would include all factors that allow an individual to exercise control over aspects of his experience such as knowledge and the attainment of knowledge through education and training.

Dominance also tends to lead to a Gesellschaft orientation (Duncan, 1969) so the Gesellschaft factors of rational value orientation and profit goals are expected to be affected by dominance. The more dominant manager is also expected to be more satisfied with his job (Vroom, 1964).

The self-effacing, masochistic individual (polar opposites of dominance) would not be expected to participate in organizations, now would he be expected to have positive attitudes toward other individuals.

Education Education is expected to result in an individual's acquisition of knowledge and in his placing a greater emphasis on cognitive aspects of his environment. Thus, it is expected that the amount of education a manager acquires will affect his economic knowledge, the emphasis

he places on training for himself and his employees, and his rational value orientation. It is also expected that education leads to a more positive perception of other individuals including employees. Interests and abilities developed during the educational process are also expected to affect a manager's participation in organizations. The amount of education is expected to be negatively but not causally related to management experience; education adquired by the manager past the age of 21 limits the amount of experience he could acquire.

Experience Managers are expected to acquire knowledge through job experience. With continuing commitment to his job, the experienced manager is expected to desire more training. Assuming that the manager's choice of job is voluntary, the more experienced manager is expected to be more satisfied. It is assumed that the more experienced manager will also have learned techniques to keep his employees satisfied and hence reduce turnover.

Profit goal orientation It is assumed that the two most basic effects that a manager's profit goal orientation will have on his orientation is the development of a desire for training and knowledge. Manager's who desire to make a great deal of profit for their cooperatives are expected to seek and obtain training that will provide them with economic knowledge.

Rational value orientation As was the case with education, a manager's rational value orientation will involve valuing cognitive aspects of his environment. Thus, managers with strong rational value orientations are expected to seek and acquire training and knowledge.

Cooperative type It is assumed that because of the different financial structure and usually more stringent economic role expectations within Farm Service cooperatives, these managers will tend to acquire more economic knowledge.

Management training It is assumed that managers who attend management training sessions will acquire economic knowledge and more positive attitudes toward employees. It is also expected that the importance of community participation is stressed in many training sessions.

Employee attitude Managers who hold favorable attitudes toward employees and their capabilities are expected to emphasize training for these employees. Assuming that positive attitudes are frequently manifested in performance, if a manager has a positive attitude toward his employees his employees are apt to be more satisfied and less likely to leave their jobs. If a manager is unhappy with his employees, this dissatisfaction with a major aspect of his role is expected to affect his job satisfaction.

Economic knowledge A manager's knowledge is expected to affect his employees attitudes and their performance. It

is assumed that more competent managers tend to have more satisfied employees (Vroom, 1964), and more satisfied employees are less likely to leave their jobs.

Employee training It is expected that employees who receive training will understand and take more interest in their jobs than will untrained employees. This interest and understanding would be expected to reduce turnover.

Job satisfaction As indicated earlier, managers who are satisfied with their jobs may instill feelings of job satisfaction in their employees which would tend to result in reduced turnover.

Role performance Although the aspects of role performance assessed in this study are largely task rather than social-emotionally oriented, it is assumed that better performing managers will tend to have less turnover among employees. The quality of a manager's task performance is expected to be an important factor affecting satisfaction of employees.

Model Building with Path Analysis

The theoretical causal ordering just discussed is presented in a path model (see Figure 5). This path model shows unidirectional arrows from each variable to all other variables upon which it is hypothesized to have a causal effect.

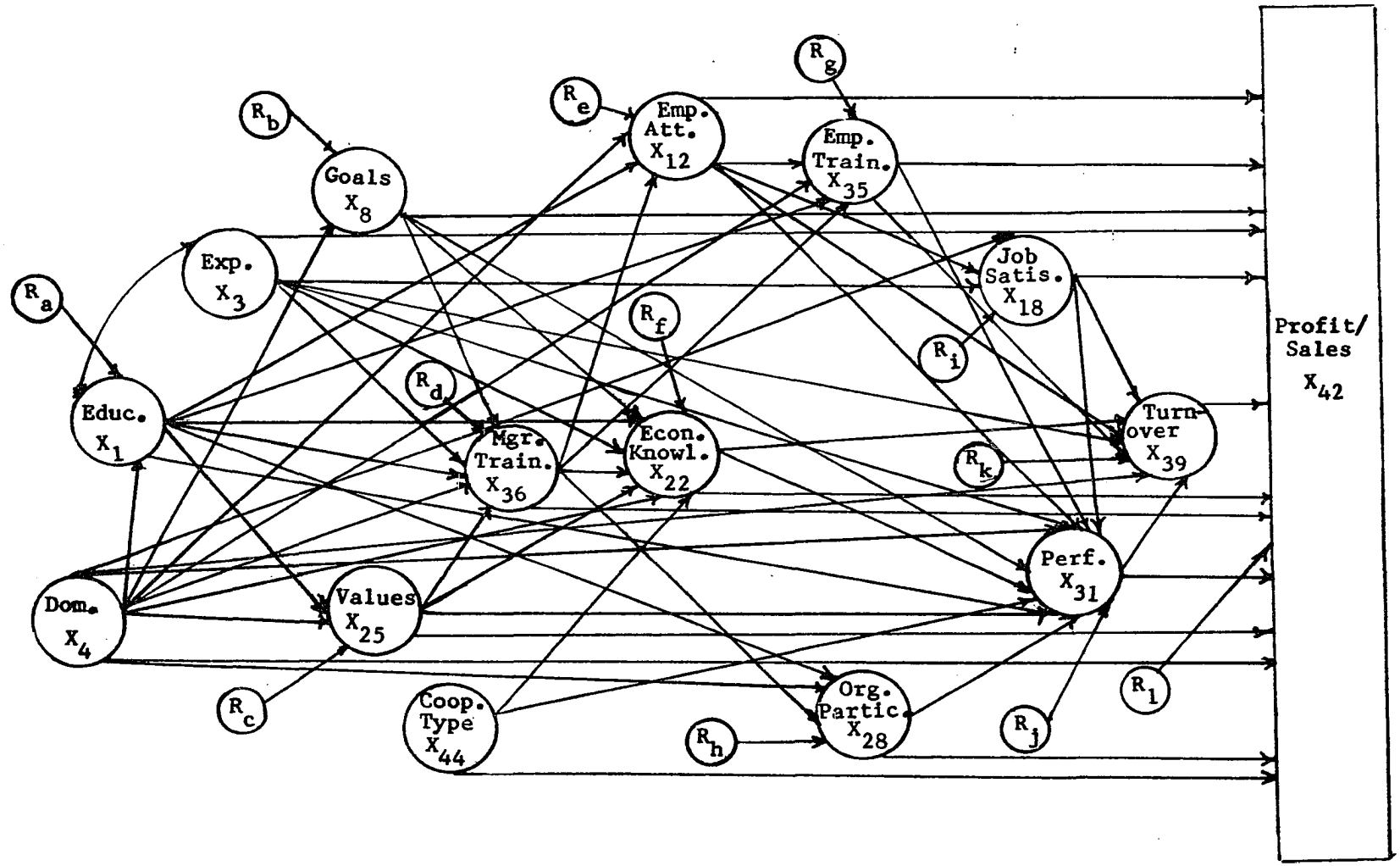

Figure 5. Validation model

Attention will now be directed to the steps that will be taken in the refinement and cross-validation of this theoretical model.

The first set of measures (the validation set) will be used to refine the theoretical model and determine the variables and paths to retain

The cross-validation set of measures will be used to test the refined validation model. A further modification of the model will be made if analysis with the cross-validation set of measures does not confirm the refined validation model. The direct and indirect effects of variables in the refined cross-validation model on the criterion variables (performance and profit measures) will then be assessed.

Analysis of the validation set of measures

The first step in the analysis begins by representing the path model in Figure 5 with a set of recursive equations. A regression equation is written for each of the endogenous variables in which the independent variables are those variables hypothesized to be directly related to the endogenous variable being considered. For example, referring to Figure 5, the regression equation for X_{36} will include the variables X_1, X_3, X_4, X_8, and X_{25}. Following this procedure, the recursive equations representing the conceptual model with the validiation set of measures (the validiation model) are:

$$X_1 = P_{1.4}X_4 + P_{1.a}R_a$$

$$X_3 = P_{3.4}X_4 + P_{3.a_1}R_{a_1}{}^{1}$$

$$X_8 = P_{8.4}X_4 + P_{8.1}X_1 + P_{8.3}X_3 + P_{8.b}R_b$$

$$X_{25} = P_{25.4}X_4 + P_{25.1}X_1 + P_{25.3}X_3 + P_{25.c}R_c$$

$$X_{36} = P_{36.4}X_4 + P_{36.1}X_1 + P_{36.3}X_3 + P_{36.8}X_8 + P_{36.25}X_{25} + P_{36.44}X_{44} + P_{36.d}R_d$$

$$X_{12} = P_{12.4}X_4 + P_{12.1}X_1 + P_{12.3}X_3 + P_{12.8}X_8 + P_{12.25}X_{25} + P_{12.44}X_{44} + P_{12.36}X_{36} + P_{12.e}R_e$$

$$X_{22} = P_{22.4}X_4 + P_{24.1}X_1 + P_{24.3}X_3 + P_{24.8}X_8 + P_{24.25}X_{25} + P_{22.44}X_{44} + P_{22.36}X_{36} + P_{22.f}R_f$$

$$X_{35} = P_{35.4}X_4 + P_{35.1}X_1 + P_{35.3}X_3 + P_{35.8}X_8 + P_{35.25}X_{25} + P_{35.44}X_{44} + P_{35.36}X_{36} + P_{35.12}X_{12} + P_{35.22}X_{22} + P_{35.g}R_g$$

$$X_{28} = P_{28.4}X_4 + P_{28.1}X_1 + P_{28.3}X_3 + P_{28.8}X_8 + P_{28.25}X_{25} + P_{28.44}X_{44} + P_{28.36}X_{36} + P_{28.12}X_{12} + P_{28.22}X_{22} + P_{28.h}R_h$$

$$X_{18} = P_{18.4}X_4 + P_{18.1}X_1 + P_{18.3}X_3 + P_{18.8}X_8 + P_{18.25}X_{25} + P_{18.44}X_{44} + P_{18.36}X_{36} + P_{18.12}X_{12} + P_{18.22}X_{22} + P_{18.35}X_{35} + P_{18.28}X_{28} + P_{18.i}R_i$$

$$X_{31} = P_{31.4}X_4 + P_{31.1}X_1 + P_{31.3}X_3 + P_{31.8}X_8 + P_{31.25}X_{25} + P_{31.44}X_{44} + P_{31.36}X_{36} + P_{31.12}X_{12} + P_{31.22}X_{22} + P_{31.35}X_{35} + P_{31.28}X_{28} + P_{31.18}X_{18} + P_{31.j}R_j$$

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[1]Numerical subscripts were used to describe the residual because this residual is not shown on the path diagrams and it is assumed that the relationship between dominance and experience will be proven to be insignificant.

$$X_{39} = P_{39.4}X_4 + \underline{P_{39.1}X_1} + P_{39.3}X_3 + \underline{P_{39.8}X_8} + \underline{P_{39.25}X_{25}} + \underline{P_{39.44}X_{44}} + \underline{P_{39.36}X_{36}} + P_{39.12}X_{12} + P_{39.22}X_{22} + P_{39.35}X_{35} + \underline{P_{39.28}X_{28}} + P_{39.18}X_{18} + P_{39.31}X_{31} + P_{39.k}R_k$$

$$X_{42} = P_{42.4}X_4 + \underline{P_{42.1}X_1} + P_{42.3}X_3 + P_{42.8}X_8 + P_{42.25}X_{25} + P_{42.44}X_{44} + P_{42.36}X_{36} + P_{42.12}X_{12} + P_{42.22}X_{22} + P_{42.35}X_{35} + P_{42.28}X_{28} + P_{42.18}X_{18} + P_{42.31}X_{31} + P_{42.39}X_{39} + P_{42.1}R_1$$

The X's and R's in the equations and in the path model are the standardized forms of variables and residual factors e's respectively. The P's represent path coefficients. The path coefficients do not carry secondary subscripts to identify the other variables assumed to affect the dependent variable. The first subscript identifies the dependent variable; the second subscript identifies the variable whose direct effect on the dependent variable is measured by the path coefficient.

Terms representing relationships which were not postulated to exist in the model are also included in the equations; they are underlined with broken lines. Regression coefficients for these terms are expected to be statistically insignificant. The purpose of this procedure was to determine whether the absence of arrows was substantiated by non-significant regression coefficients.

The next step involves sequential regression analysis to test the statistical significance of paths. Any path to remain in the model has to be statistically significant. T values of regression coefficients were used to evaluate the significance of the paths.

The values of the standardized partial regression coefficients in each of the regression equations in the recursive set were calculated. A t test was applied to each coefficient. Coefficients with t values less than the tabular t (1.291) at the .20 significance level (Snedecor, 1956, p. 46), were eliminated from the equations and the equations were recalculated. This procedure was followed until each regression equation contained only coefficients significant at the .20 level. Significant t values are indicated with an asterisk.

The steps followed and the variables (with standardized regression coefficients and t values) included in each equation are shown in Table 71. The dependent variables are listed in the first column. The first row corresponding to a dependent variable contains information on the independent variables (listed across the top of the table) in the first regression equation for the dependent variable. If all the t values in the first equation for a dependent variable were not significant, the results of succeeding equations in which non-significant independent variables were deleted are presented on following lines.

Table 71. Standardized partial regression coefficients and t values for the validation model

Dependent	Dominance (X-4)		Education (X-1)		Experience (X-3)	
	b*	t	b*	t	b*	t
Education (X-1)	.2625	2.6232*				
Experience (X-3)	-.1499	-1.4622*				
Goals (X-8)	-.0349	-.3209	-.0243	-.2219	.0782	.7321
Values (X-25)	.1364	1.2863	.1710	1.6012*	.0681	.6536
			.1940	1.9067*		
Man. training (X-36)	-.0054	-.0495	.2507	2.2831*	.1845	1.7303*
			.2480	2.4336*	.1835	1.8004*
Employees attitude (X-12)	.2837	2.7459*	.0695	.6466	-.0350	-.3391
	.3057	3.1574*				
Econ. knowledge (X-22)	.2692	2.5945*	.0544	.5039	-.1500	-1.4489*
	.3093	3.1600*			-.1460	-1.4787*
Employee training (X-35)	.1868	1.7127*	-.0570	-.5453	-.2873	2.8401*
	.1540	1.6233*			-.2726	2.8637*
Org. part. (X-28)	.1467	1.3157*	.0225	.2104	-.1616	-1.5629*
	.1726	1.6821*			-.1698	-1.7067
Job satisfaction (X-18)	-.0217	-.1769	-.0864	-.7493	.0970	.8269
Performance (X-31)	.2031	1.9682*	.1528	1.5742*	-.0931	-.9416
	.2350	2.4740*	.1998	2.1699*		
Turnover (X-39)	-.0293	-.2326	.0382	.3255	-.1519	-1.2823
Profit/sales (X-42)	-.0107	-.1036	-.0112	-.1158	.2168	2.2103*
					.2244	2.5511*
					.2283	2.6384*

Table 71. (Continued)

Dependent	Goals (X-8) b*	Goals (X-8) t	Values (X-25) b*	Values (X-25) t	Coop. Type (X-44) b*	Coop. Type (X-44) t
Education (X-1)						
Experience (X-3)						
Goals (X-8)						
Values (X-25)						
	-.0106	-.1026	-.0056	-.0533	-.0030	-.0279
Man. training (X-36)						
Employees attitude (X-12)	-.1774	-1.8085*	-.0079	-.0783	.1535	1.5295*
	-.1823	-1.9034*			.1568	1.6207*
Econ. knowledge (X-22)	.0214	.2167	.1009	1.0002	.0635	.6298
Employee training (X-35)	.0286	.2960	-.0820	-.8388	.1977	2.0009*
					.1887	2.0000*
Org. part. (X-28)	.0962	.9730	-.0624	-.6238	.2916	2.8872*
					.3133	3.2094*
Job satisfaction (X-18)						
	.0434	-.4056	-.0409	-.3773	-.0416	-.3602
Performance (X-31)	.0006	.0067	.1542	1.6952*	.2081	2.1456*
			.1400	1.5624*	.2079	2.3516*
Turnover (X-39)	-.1033	-.9634	-.0927	-.8403	.0241	.2032
Profit/sales (X-42)	-.1679	-1.8984*	.0721	.7942	.4702	4.8266*
	-.1728	-2.0205*			.4421	5.1127*
	-.1743	-2.0513*			.4403	5.1311*

Table 71. (Continued)

Dependent	Mgr.Train. (X-36) b*	Mgr.Train. (X-36) t	Empl.Att. (X-12) b*	Empl.Att. (X-12) t	Econ.Know. (X-22) b*	Econ.Know. (X-22) t
Education (X-1)						
Experience (X-3)						
Goals (X-8)						
Values (X-25)						
Man. training (X-36)						
Employees attitude (X-12)	.0225	.2225				
Econ. knowledge (X-22)	.1331	1.3079*				
	.1506	1.5419*				
Employee training (X-35)	.3431	3.4610*	.0070	.0666	-.0263	-.2526
	.3232	3.4623*				
Org. part. (X-28)	.1995	1.9679*	.1018	.9507	-.1915	-1.7968*
	.2076	2.1294*			-.2093	-2.0206*
Job satisfaction (X-18)	.2358	2.0016*	.1951	1.6823*	-.0217	-.1857
	.2008	1.9904*	.1494	1.4805*		
Performance (X-31)	.1301	1.2850	.0661	.6680	.1600	1.6288*
					.1841	1.9698*
Turnover (X-39)	.0396	.3249	-.1530	-1.2935*	-.2080	-1.7486*
			-.1213	-1.1591	-.1365	-1.3307*
					-.1338	-1.3018*
Profit/sales (X-42)	-.0586	-.5857	-.2483	2.5352*	.2599	2.6171*
			-.2724	-3.0516*	.2149	2.4968*
			-.2683	-3.0584*	.2142	2.5022*

Table 71. (Continued)

Dependent	Empl.Train. (X-35) b*	Empl.Train. (X-35) t	Org.Part. (X-28) b*	Org.Part. (X-28) t	Job Satis. (X-18) b*	Job Satis. (X-18) t
Education (X-1)						
Experience (X-3)						
Goals (X-8)						
Values (X-25)						
Man. training (X-36)						
Employees attitude (X-12)						
Econ. knowledge (X-22)						
Employee training (X-35)						
Org. part. (X-28)						
Job satisfaction (X-18)	-.0738	-.6093	-.0136	-.1150		
Performance (X-31)	.0705	.6923	-.0263	-.2647	.0970	1.0525
Turnover (X-39)	.0755	.6198	-.1607 -.1004	-1.3553* -.9580	-.1157	-1.0463
Profit/sales (X-42)	.0053	.0529	.0096	.0981	.0532 .0255	.5831 .2968

Table 71. (Continued)

Dependent	Performance (X-31) b*	Performance (X-31) t	Turnover (X-39) b*	Turnover (X-39) t
Education (X-1)				
Experience (X-3)				
Goals (X-8)				
Values (X-25)				
Man. training (X-36)				
Employees attitude (X-12)				
Econ. knowledge (X-22)				
Employee training (X-35)				
Org. part. (X-28)				
Job satisfaction (X-18)				
Performance (X-31)				
Turnover (X-39)				
	.0998	.7583		
Profit/sales (X-42	-.1252	-1.1564	-.1735	-1.9050*
			-.1925	-2.2154*
			-.1950	-2.2666*

The results of the final regression analyses with the validation set of measures are shown in the refined validation model in Figure 6. Only t values were entered in the model. At this stage, residual coefficients were not computed, they will be computed after the path coefficients are estimated in the cross-validation analysis.

As indicated in Table 71, many t values were not large enough to maintain arrows in the model, and several relationships which were postulated not to exist in the model were found to have statistically significant regression coefficients. Thus, arrows have been added in the refined validation model from dominance to experience; from goals to employee attitude; from experience and cooperative type to employee training; and from experience, cooperative type, and economic knowledge to organizational participation.

Based on this data analysis with the validation set of measures, the best predictors of role performance consisted of dominance, education, rational value orientation, cooperative type, and economic knowledge. The best predictors of profit/sales consisted of management experience, profit goal orientation, cooperative type, employee attitude, economic knowledge, and turnover.

Since the analysis revealed that role performance and profit/sales had different sets of best predictors, and there was no significant path between them, two diagrams have been

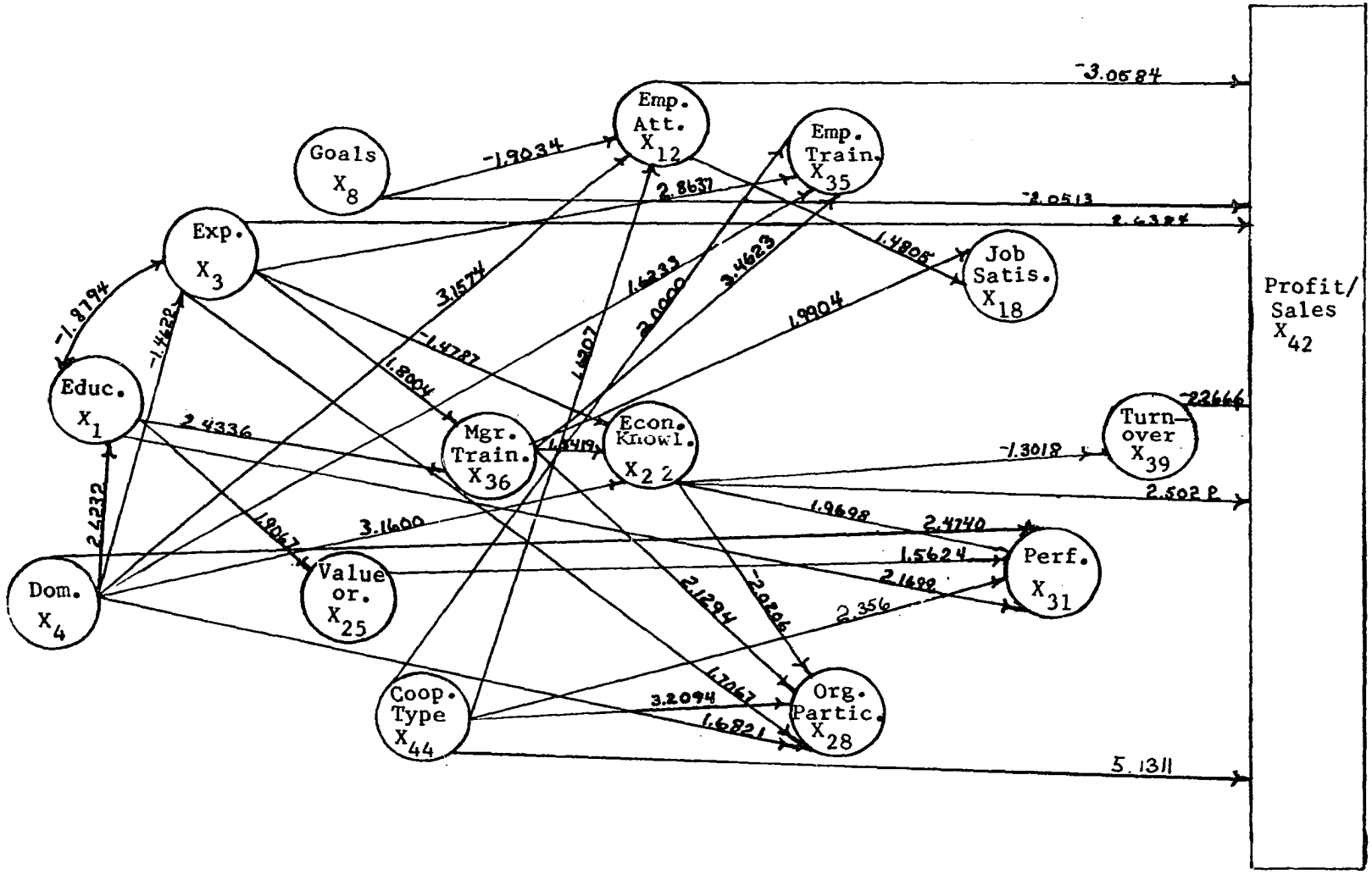

Figure 6. Refined validation model

separated out from the refined validation model, one for performance (Diagram A), and one for profit/sales (Diagram B). These diagrams are presented in figure 7.

Analysis of the cross-validation set of measures

The next step consists of cross-validating the refined validation model with the cross-validation set of measures. The cross-validation model in Figure 8 is identical to the refined validation model except that it contains variable numbers for the cross-validation set of measures. The regression equations to be computed for the cross-validation model are presented below:

$$X_1 = P_{1.5}X_5 + P_{1.a}R_a$$

$$X_3 = P_{3.5}X_5 + P_{1.a}R_a$$

$$X_{26} = P_{26.1}X_1 + P_{26.c}R_c$$

$$X_{36} = P_{36.1}X_1 + P_{26.3}X_3 + P_{36.d}R_d$$

$$X_{13} = P_{13.5}X_5 + P_{13.9}X_9 + P_{13.44}X_{44} + P_{13.e}R_e$$

$$X_{23} = P_{23.5}X_5 + P_{23.3}X_3 + P_{23.36}X_{36} + P_{23.f}R_f$$

$$X_{35} = P_{35.5}X_5 + P_{35.3}X_3 + P_{35.44}X_{44} + P_{35.36}X_{36} + P_{35.g}R_g$$

$$X_{29} = P_{29.5}X_5 + P_{29.3}X_3 + P_{29.44}X_{44} + P_{29.36}X_{36} + P_{29.23}X_{23} + P_{29.h}R_h$$

$$X_{19} = P_{19.36}X_{36} + P_{19.13}X_{13} + P_{19.i}R_i$$

$$X_{32} = P_{32.5}X_5 + P_{32.1}X_1 + P_{32.26}X_{26} + P_{32.44}X_{44} + P_{32.23}X_{23} + P_{32.j}R_j$$

$$X_{39} = P_{39.23}X_{23} + P_{39.k}R_k$$

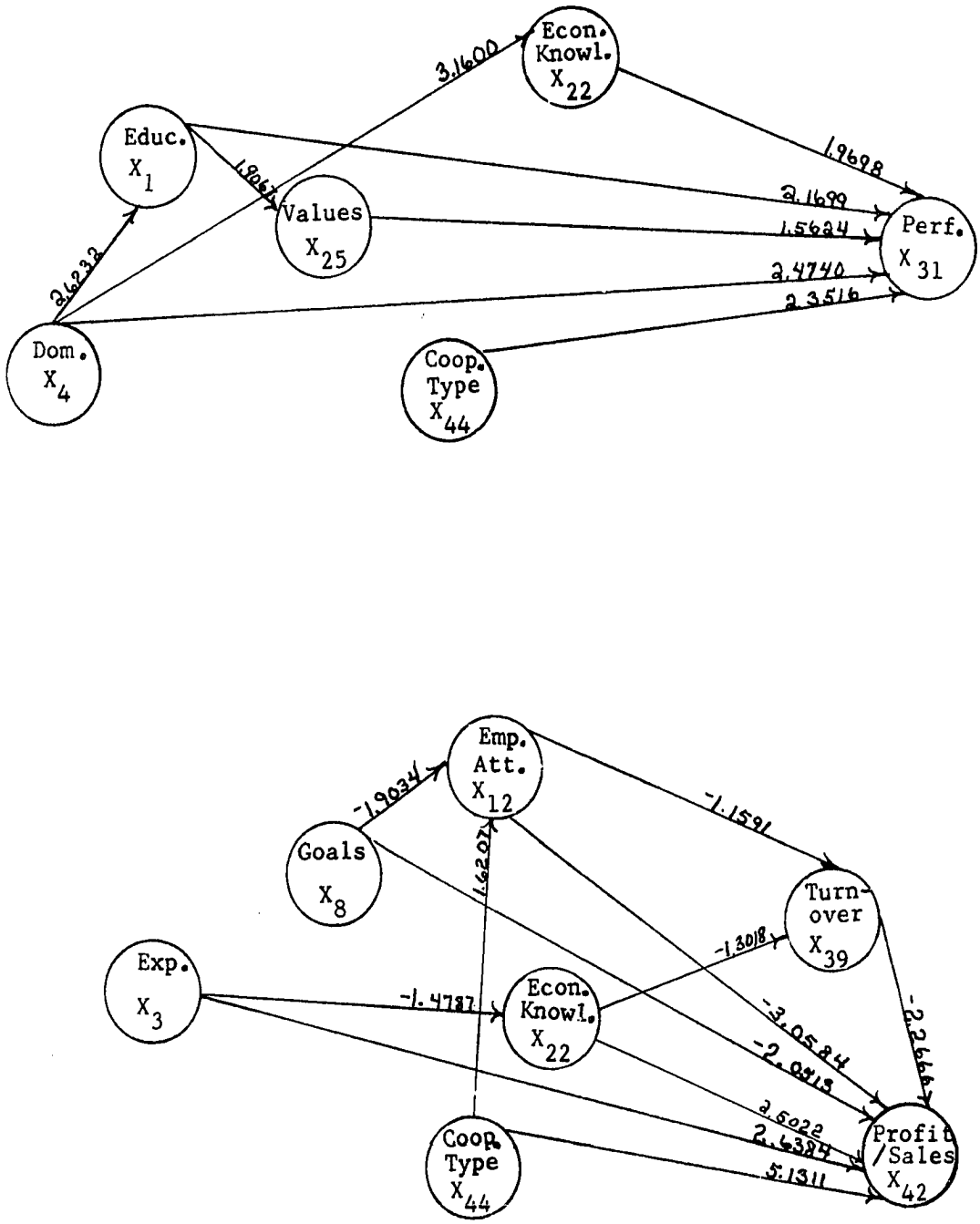

Figure 7. Path diagrams for role performance and profit/sales in the refined validation model

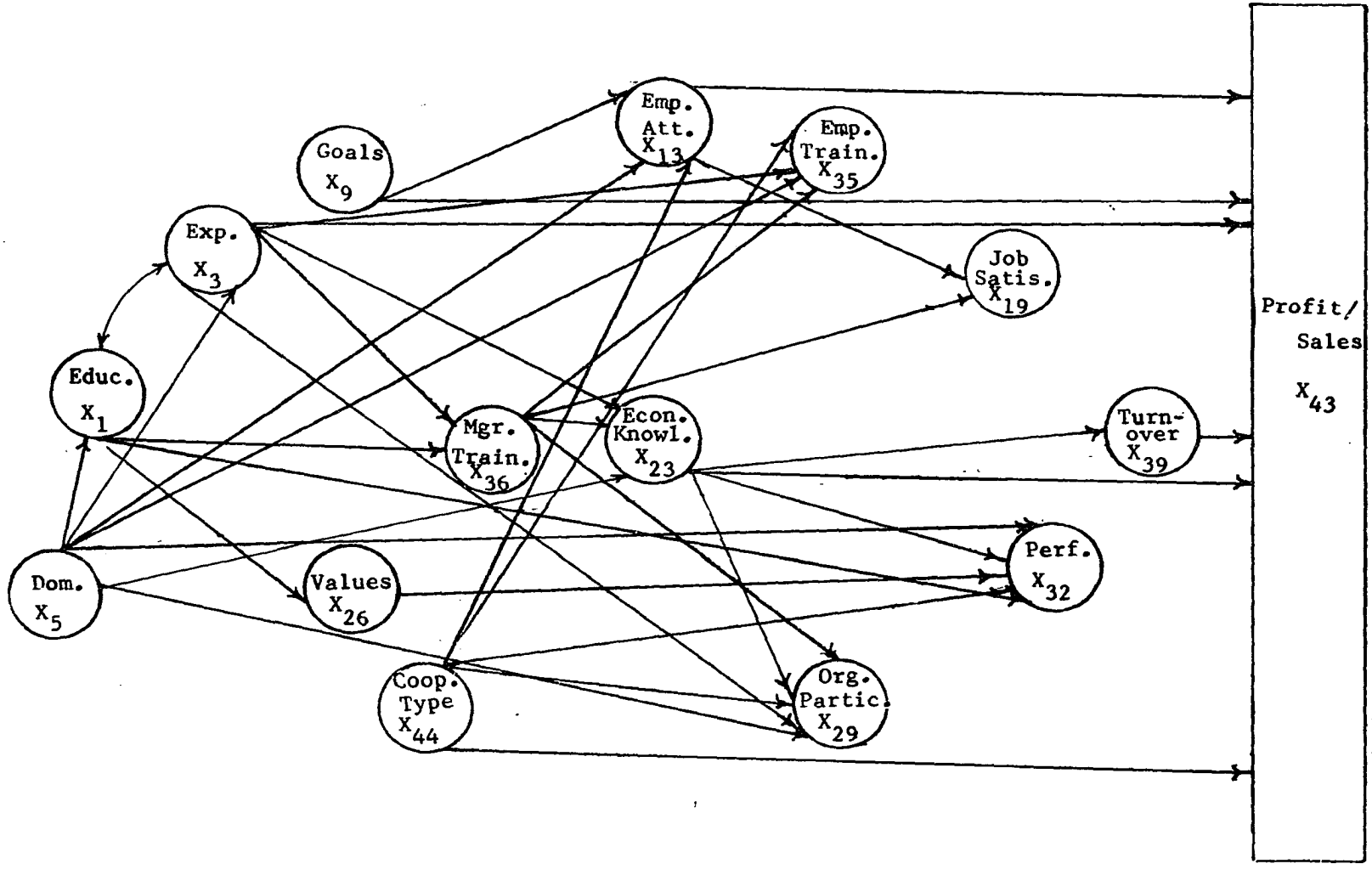

Figure 8. Cross-validation model

$$X_{43} = P_{43.3}X_3 + P_{43.9}X_9 + P_{43.44}X_{44} + P_{43.13}X_{13} + P_{43.23}X_{23} + P_{43.39}X_{39} + P_{43.1}R_1$$

The values of the partial regression coefficients in each of the regression equations in the recursive set were calculated. A t test was applied to each coefficient. Coefficients with t values less than 1.291--the tabular t value at the .20 significance level (Snedecor, 1956, p. 46), were eliminated from the equations and the equations were re-calculated. This procedure was followed until each regression equation contained only coefficients significant at the .20 level. The steps followed, and the variables (with standardized regression coefficients and t values) included in each equation, are shown in Table 72. The elimination of non-significant variables results in a final set of recursive equations as follows:

$$P_1 = P_{1.5}X_5 + P_{1.a}R_a \quad (1)$$

$$P_{26} = P_{26.1}X_1 + P_{26.c}R_c \quad (2)$$

$$P_{36} = P_{36.1}X_1 + P_{36.3}X_3 + P_{36.d}R_d \quad (3)$$

$$P_{13} = P_{13.5}X_5 + P_{13.e}R_e \quad (4)$$

$$P_{23} = P_{23.5}X_5 + P_{23.36}X_{36} + P_{23.f}R_f \quad (5)$$

$$P_{35} = P_{35.3}X_3 + P_{35.44}X_{44} + P_{35.36}X_{36} + P_{35.g}R_g \quad (6)$$

$$P_{29} = P_{29.44}X_{44} + P_{29.36}X_{36} + P_{29.h}R_h \quad (7)$$

$$P_{19} = P_{19.36}X_{36} + P_{19.i}R_i \quad (8)$$

$$P_{32} = P_{32.5}X_5 + P_{32.1}X_1 + P_{32.26}X_{26} + P_{32.23}X_{23} + P_{32.j}R_j \quad (9)$$

$$P_{43} = P_{43.3}X_3 + P_{43.44}X_{44} + P_{43.1}R_1 \quad (10)$$

Table 72. Standardized partial regression coefficients and t values for the cross-validation model

Dependent	Dominance (X-5)		Education (X-1)		Experience (X-3)	
	b*	t	b*	t	b*	t
Education (X-1)	.3758	3.9103*				
Experience (X-3)	-.0167	-.1611				
Values (X-26)			.3730	3.8766*		
Mgt. training (X-36)			.2480	2.4336*	.1835	1.8004*
Employee attitude (X-13)	.2261	2.2167*				
	.2130	2.1026*				
Econ. knowledge (X-23)	.2210	2.1863*			-.0005	-.0050
	.2210	2.1995*				
Employee training (X-35)	.0299	.3175			-.2988	-3.1434*
					-.2996	-3.1685*
Org. participation (X-29)	.0661	.6290			-.1214	-1.1788
Job satisfaction (X-19)						
Performance (X-32)	.1537	1.5729*	.1764	1.8741*		
	.1374	1.4232*	.1910	2.0512*		
Turnover (X-39)						
Profit/sales (X-43)					.1767	1.9105*
					.1799	2.0099*

Table 72. (Continued)

Dependent	Goals (X-9) b*	Goals (X-9) t	Values (X-26) b*	Values (X-26) t	Coop. Type (X-44) b*	Coop. Type (X-44) t
Education (X-1)						
Experience (X-3)						
Values (X-26)						
Mgt. training (X-36)						
Employee attitude (X-13)	-.1051	-1.0301			.0844	.8302
Econ. knowledge (X-23)						
Employee training (X-35)					.2162 .2148	2.2914* 2.2902*
Org. participation (X-29)					.2152 .2010	2.0681* 1.9922*
Job satisfaction (X-19)						
Performance (X-32)			.2959 .3035	3.0673* 3.1409*	.0905	1.0462
Turnover (X-39)						
Profit/sales (X-43)	.0590	.6405			.4418 .4698	4.8263* 5.2484*

Table 72. (Continued)

Dependent	Mgr.Train. (X-36) b*	Mgr.Train. (X-36) t	Empl.Att. (X-13) b*	Empl.Att. (X-13) t	Econ.Know. (X-23) b*	Econ.Know. (X-23) t
Education (X-1)						
Experience (X-3)						
Values (X-26)						
Mgt. training (X-36)						
Employee attitude (X-13)						
Econ. knowledge (X-23)	.1576 .1575	1.5446* 1.5677*				
Employee training (X-35)	.3271 .3305	3.4395* 3.5127*				
Org. participation (X-29)	.1574 .1505	1.5095* 1.4915*			.0114	.1058
Job satisfaction (X-19)	.1585 .1704	1.5414* 1.6673*	.1042	1.0130		
Performance (X-32)					.2388 .2556	2.7027* 2.9418*
Turnover (X-39)					-.1211	-1.1762
Profit/sales (X-43)			.0665	.7263	.0940	1.0079

Table 72. (Continued)

Dependent	Org.Part (X-29) b*	Org.Part (X-29) t	Job Satis. (X-19) b*	Job Satis. (X-19) t	Turnover (X-39) b*	Turnover (X-39) t
Education (X-1)						
Experience (X-3)						
Values (X-26)						
Mgt. training (X-36)						
Employee attitude (X-13)						
Econ. knowledge (X-23)						
Employee training (X-35)						
Org. participation (X-29)						
Job satisfaction (X-19)						
Performance (X-32)						
Turnover (X-39)						
Profit/sales (X-43)					-.0863	-.9454

This final set of recursive equations is shown diagramatically in the refined cross-validation model (Figure 9). Standardized partial regression coefficients are inserted in the model as estimates of path coefficients.

As indicated above, the result of data analysis with the cross validation set of measures did not completely confirm the refined validation model. Fifteen arrows were dropped from the model at this stage of analysis. Of these, four arrows represented relationships that were initially hypothesized to be insignificant, but were included in the cross-validation model on the basis of analysis with the first set of measures. These four arrows were from dominance to management experience, management experience to organizational participation, profit goal orientation to employee attitude, and economic knowledge to organizational participation.

Four of the remaining arrows to be dropped led to profit/sales from goals, employee attitude, economic knowledge, and turnover. The relationships between profit goal orientation and profit/sales was not in the predicted direction. However, the other relationships to profit/sales were in the predicted direction and were moderately strong in the validation analysis. Of the other arrows deleted, only the one from cooperative type to performance represented a moderately strong relationship in the validation analysis.

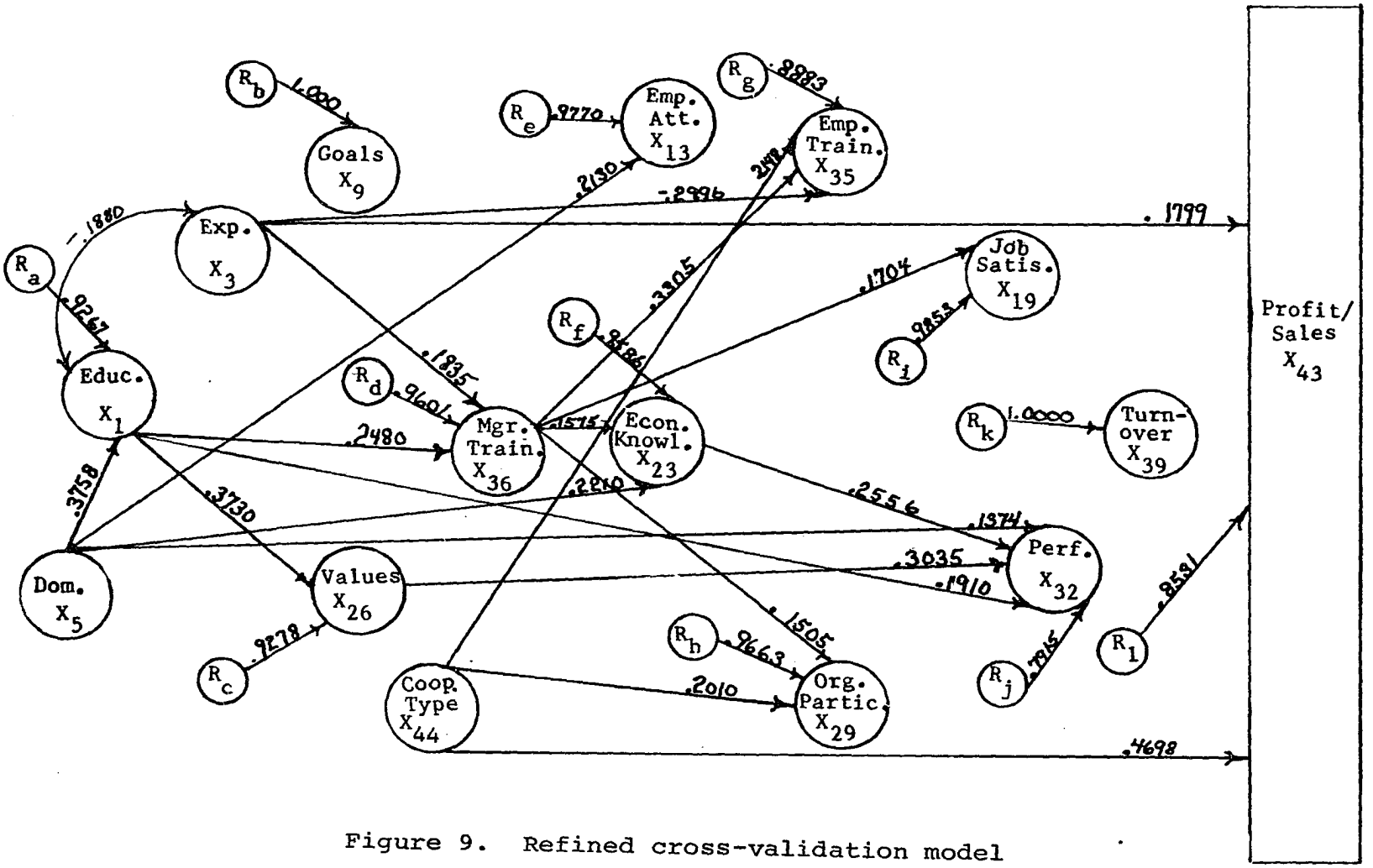

Figure 9. Refined cross-validation model

Determination of residual paths

As indicated earlier, an unmeasured residual variable can be added to the model when an endogenous variable is not completely determined by variables included in the model. None of the regression equations in the final recursive set approach complete determination of the respective dependent variables, so the introduction of residual path coefficients is required.

The residual path coefficient may be interpreted as the proportion of the standard deviation of an endogenous variable that is caused by all variables outside of the model being considered (Land, 1968, p. 12). The residual path coefficient can be estimated by: $\sqrt{1 - R^2}$ (Land, 1968, p. 19). The residual path coefficients were calculated following this procedure. Data pertinent to these calculations are shown in Table 73. The residual path coefficients have been added to the refined cross-validation model (Figure 9).

Interpretation of the model

The results shown in the refined cross-validation model (Figure 9) provide an interpretation of the direct relationships among variables and the relative strength of these relationships.

Two variables, profit goal orientation and turnover, were found to be unrelated to all other variables. Two other variables, employee attitude and organizational participation, were found to have no direct or indirect effect on role

Table 73. Residual path coefficients

Endogenous Variable	Regression Equation No.	R^2	Residual Path Coefficient	Estimate of Residual Path Coefficient
Education (X-1)	1	.14120	R_a	.9267
Goals (X-9)	-	----	R_b	1.0000
Values (X-26)	2	.13911	R_c	.9278
Manager training (X-36)	3	.07808	R_d	.9601
Employee attitude (X-13)	4	.04538	R_e	.9770
Economic knowledge (X-23)	5	.08096	R_f	.9586
Employee training (X-35)	6	.21082	R_g	.8883
Organization part. (X-29)	7	.06615	R_h	.9663
Job satisfaction (X-19)	8	.02902	R_i	.9853
Performance (X-32)	9	.37352	R_j	.7915
Turnover (X-39)	-	----	R_k	1.0000
Profit/sales (X-43)	10	.27214	R_l	.8531

performance or profit/sales.

All but one of the variables (cooperative type) that had direct relationships to performance in the refined validation model also were directly linked to performance in the refined cross-validation model. The strongest relationship was between rational value orientation and performance followed by economic knowledge, education, and dominance.

As indicated earlier, most of the direct linkages to profit/sales found in the refined validation model were not cross-validated. Only two direct linkages (from cooperative type and management experience) to profit/sales remain in the final model.

Three of the four variables having direct effects on role performance also have indirect effects. Experience, although having no direct effect on performance, has an indirect linkage. The relative importance of these indirect effects is not immediately apparent from the path diagram. An attempt to quantify these effects is presented in the following discussion.

Land (1968) outlined a procedure for <u>determining the indirect effects</u> of one variable on another in a path diagram. He argued that

> [i]f the total effect of an exogenous variable Z_1 on an endogenous variable Z_3 is defined as the bivariate correlation of the two variables, and if the <u>direct effect</u> is estimated by P_{31} (the path coefficient), then the <u>indirect effect</u> must be

estimated by $r_{12}P_{32}$, or in a more generally applicable form: Total Indirect Effect (TIE) of Z_1 on $Z_3 = r_{31} - P_{31}$ (Land, 1968, p. 16).

Adopting this definition, the indirect effects of each variable on performance and profit/sales were calculated. Indirect effects were computed using the formula developed by Land where the total indirect effect of a on c through b is expressed as $P_{cb}r_{ab}$. If the indirect effect of a goes through more than one variable, it was computed as follows:

$$r_{da}(\text{ind}) = P_{dc}P_{cb}r_{ab}$$

$$r_{ea}(\text{ind}) = P_{ed}P_{dc}r_{ab}$$

The above equations were derived by simple substitution into Land's formula.

Since the total indirect effect of a on c through b is expressed by $P_{cb}r_{ab}$, the effect of more indirect paths from a to c through b was subtracted from $P_{cb}r_{ab}$ to obtain a's indirect effect on c through b given the less direct path(s) through the same variables. For example, where $a \rightarrow c \rightarrow d$ and $a \rightarrow b \rightarrow c \rightarrow d$, the effect of $a \rightarrow b \rightarrow c \rightarrow d$ is subtracted from $P_{dc}r_{ca}$ in assessing the indirect effect of a on d through c given $a \rightarrow b \rightarrow c \rightarrow d$.

Although it has been argued that these indirect effects might be more accurately assessed by setting up a recursive

set of equations on the basis of the path being investigated,[1] it seems that the procedure employed above would only slightly underestimate the indirect effects if this is the case.

Since the indirect effects of a variable may be comprised of more than one indirect path, the total indirect effect and its component parts were calculated. The indirect effects that were calculated for each variable are indicated in Table 74. The table also indicates the value of the indirect effect for the various paths associated with each variable which indicates that necessary variables are omitted from the model and/or additional relationships are required to account for these unexplained indirect effects.

None of the variables in the model had an indirect effect on profit/sales. Dominance and education had the greatest indirect effects on performance.

One important indirect effect of dominance on performance is through its effect on economic knowledge. Thus one way in which dominance has an effect on performance is by influencing a manager to acquire economic knowledge which ultimately affects his performance. Another important indirect effect of dominance on performance is through the path involving education and rational value orientation. More dominant

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[1]Warren, Richard D., Department of Sociology and Anthropology, Iowa State University, Ames, Iowa. Determination of indirect effects. Private communication. 1971.

Table 74. Total, direct, and indirect effects of variables in the refined cross-validation model

Variable	Total Effect (r_y)	Total Direct Effect (P_{ji})	Total Indirect Effect ($r_y - P_{ji}$)	Indirect Path Effects in Model		Indirect Effect Not Explained
INDIRECT EFFECTS ON PERFORMANCE						
Dominance (X-5)	.3979	.1374	.2605	X_1	=.0193	
				X_1, X_{26}	=.0425	
				X_1, X_{36}, X_{23}	=.0100	
				X_{23}	=.0507	
				Total	=.1225	.1380
Education (X-1)	.3829	.1910	.1919	X_{26}	=.1132	
				X_{36}, X_{23}	=.0086	
				Total	=.1218	.0701
Experience (X-3)	-.1821			X_{36}, X_{23}	=.0102	
Values (X-26)	.4916	.3035	.1881			.1881
Manager train. (X-36)	.1341			X_{23}	=.0393	
Econ. know. (X-23)	.3794	.2556	.1238			.1238
INDIRECT EFFECTS ON PROFIT/SALES						
Experience (X-3)	.2328	.1799	.0529			.0529
Coop. type (X-44)	.4901	.4698	.0203			.0203

individuals acquire more education which affects the development of a rational value orientation, which in turn influences role performance. This path from education through value orientation to performance is the largest indirect contribution of any variable in the model. The total indirect effect of dominance on performance through education is considerable, but most of this effect seems to result from the relationship of education to performance through rational value orientation.

Although management training did not have a direct effect on performance, it does have a small indirect effect through economic knowledge.

Summary

The direct effects of variables in the path model on performance and profit/sales were the same as those indicated in the stepwise regression cross-validations. But the path approach provided insights into relationships among factors affecting the criterion variables, and information on indirect effects that were not readily apparent in the regression analysis.

Two limitations of this path model should be noted. First, the residual effects on performance and profit/sales are quite high (R_j = .7915; R_1 = .8531). Thus, the variables included in the path model collectively explain only a small amount of the variance in the performance score (R^2 = .3735) and in

profit/sales (R^2 = .2721). Second, as shown in Table 74, in no case is the total indirect effect of a variable on the role performance score, or on profit/sales, completely accounted for by the model. Both of these conditions suggest that variables not identified need to be added to the model.

CHAPTER EIGHT: SUMMARY

This thesis is concerned with factors related to success in business management. The businesses focused on were a special type of local retail farm supply firm--the farmer cooperative. The importance of these firms in increasing farm efficiency and their contribution to total economic progress was discussed.

It was pointed out that although the manager is one of the most important factors in the efficiency of a local retail farm supply business, very little research on selection and training of managers has been done. There is a need to provide these businesses with data on certain basic characteristics of successful managers which could be used in selection or assist in training. The present study was conceptualized and executed in response to this research need. The general objectives were:

1. To determine the characteristics of cooperative managers and cooperatives that will permit prediction of managerial success as measured by the manager's role performance and the economic success of his cooperative.
2. To develop measuring devices that will evaluate the characteristics determined to have high predictive value.

Theoretical Orientation

To provide a conceptual framework for analysis, concepts relevant to the study of individuals and social systems were reviewed and integrated into a conceptual scheme.

Under the discussion of individual factors the topics of human behavior, socialization, and personality system were discussed. A general conceptual model focusing largely on an individual's personality system was developed following a discussion of basic motivational forces, socialization, and basic personality characteristics. Two basic components of the personality system, general orientation, and status-role orientation, were delineated.

Each of these basic components was described as being composed of motivational, cognitive, and value orientations. Three classes of motivational orientation were presented--constructs relating to goals, behavioral predispositions, and values. The behavioral dispositions focused on were attitudes and interpersonal traits. Four cognitive factors were discussed--intelligence, symbolic skill, beliefs, and knowledge.

Attention was then directed to a general exposition of social systems. Loomis' and Parsons' social system theories were reviewed. Gemeinschaft and Gesellschaft systems were discussed, followed by a treatment of the formal organization as a type of Gesellschaft social system, and the business firm as a special type of formal organization.

Arguments for viewing the farmer cooperative as a business firm were presented, and aspects of farmer cooperatives were commented upon in terms of characteristics of business firms.

The discussions of individual and social system factors were interrelated in a discussion of the manager's role in the cooperative. The farmer cooperative as a social system and the manager's role within that system were described by specifying the relationship between the focal position (the manager) and a series of counter positions, and then specifying relationships among counter positions.

The decision was made to employ two measures of successful role performance--managerial behavior and behavioral outcomes in terms of economic success of the cooperative. Expectations for the managerial role were then presented. Levels of management were commented on. A review of leadership typologies was presented in which leadership behavior was discussed on a continuum ranging from task to social-emotional performance.

Due to limitations in available data, the aspects of managerial performance focused on in this thesis was largely task-oriented in nature. A discussion of performance areas employed, general functions, and operational areas, was presented.

The basic conceptual model was expanded based on the theoretical orientations presented. The basic components of that model were: the manager's past status sets and the task

environment--the manager, the cooperative (with sub-systems of board of directors and employees), customer-members, and other systems within and outside of the local community.

Derivation of Hypotheses

The conceptual model served as a guide for the development of hypotheses concerning relationships between components of the model. Segments of theories and empirical research relevant to management success were drawn upon to develop selected hypotheses relevant to the present study. Specific propositions were extracted from more general propositions by reduction of key terms. In most cases general hypotheses were explicated into sub-general hypotheses, and some sub-general hypotheses were explicated into specific hypotheses.

The derivation of hypotheses followed the same outline as the development of the theoretical orientation. A few important factors in a manager's socialization were discussed, followed by a normative description of a manager's personality system with attention directed first at general orientation and next at status-role orientation. After a brief discussion of extra-system performance, attention was focused on social system factors, first the focal social system, the cooperative, and then on the organization set.

Hypotheses were developed first in which the above factors were related to the first measure of managerial success--role

performance. A very brief discussion was then presented of those factors that were expected to relate to the second measure of managerial success--economic success of a cooperative. Theoretical hypotheses relating these factors to economic success were presented in a tabular format. The general hypotheses are listed below in abbreviated form.

General hypotheses

There is a relationship[1] between each of the following theoretical concepts and a manager's role performance:

G.H. 1: a manager's education (positive)

G.H. 2: a manager's favorable life experiences (positive)

G.H. 3: a manager's management experience (positive)

G.H. 4: a manager's interpersonal traits

G.H. 5: a manager's self-confidence (positive)

G.H. 6: a manager's motivational orientation in his managerial role

G.H. 7: a manager's role-related knowledge (positive)

G.H. 8: a manager's rational value orientation toward economic ends (positive)

G.H. 9: a manager's participation in community organizations (positive)

G.H. 10: a manager's power (positive)

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[1]If the hypothesis is directional, direction is indicated in parentheses.

G.H. 11: the amount of training within a cooperative (positive)

G.H. 12: the action of a manager's board of directors

G.H. 13: the use of advisors (positive)

There is a relationship between each of the following theoretical concepts and the economic success of a cooperative:

G.H. 14: a manager's education (positive)

G.H. 15: a manager's favorable life experiences (positive)

G.H. 16: a manager's management experience (positive)

G.H. 17: a manager's interpersonal traits

G.H. 18: a manager's self-confidence (positive)

G.H. 19: a manager's motivational orientation in his managerial role

G.H. 20: a manager's role-related knowledge (positive)

G.H. 21: a manager's rational value orientation toward economic ends (positive)

G.H. 22: a manager's participation in community organizations (positive)

G.H. 23: a manager's power (positive)

G.H. 24: the amount of training within a cooperative (positive)

G.H. 25: the action of sub-systems within a cooperative

G.H. 26: use of advisors (positive)

G.H. 27: a manager's role performance

Methods

Data collection

Respondents were randomly selected from the population of managers of Iowa farmer cooperatives. Branches of individual cooperatives and cooperatives with a yearly volume of fertilizer less than $15,000 were excluded from the sample.

The field study was conducted in 1966. A survey technique employing two interview schedules and two questionnaires was used.

Concept operationalization

Data for this study were collected prior to the theoretical development of this thesis. An effort was made to obtain operational measures for all the theoretical concepts, but indicators were used in some areas where direct operational measures were not available.

Selected measures for each variable subject to considerable measurement error were obtained. But in some cases where measurement error was great, no alternate measure was available. Single measures were developed where measurement error was minimal. Each operationalization was discussed and frequency distributions on the measure were presented.

Analysis procedures

Correlation analysis and multiple linear regression were used to assess the interrelationships of variables. The

parametric significance tests employed were commented upon, and the extent to which data in the present study met the assumptions of these tests was discussed.

Findings: Two-variable Analyses

The theoretical hypotheses were presented with their attendant empirical hypotheses in which operational measures were substituted for the theoretical concepts. All the empirical measures developed (composites and alternate forms) were employed in the two-variable analyses.

The empirical hypotheses were analyzed by use of correlation. The values of the correlation coefficients were tested for significance using the t test technique. Since this research was essentially exploratory, the .10 significance level was employed so that potentially promising relationships would not be ignored.

Eight of the 36 empirical hypotheses relating to a manager's role performance were not supported at the 10 percent level. However, five of these were in two areas--profit goal orientation and job satisfaction. All the general hypotheses but one (management experience) were given at least tentative support.

The variables showing the strongest relationship with performance were (in order of strength of relationship) dominance, education, employee attitude, rational value orientation, self-confidence, product knowledge, and economic knowledge.

Only seven of 40 empirical hypotheses involving profit/sales were given support. Only two of the 14 general hypotheses were supported. The strongest relationships in order, were years of management experience, product knowledge, economic knowledge, and employee turnover. An unexpected negative relationship was found between role performance and economic success (profit/sales); possible explanations of this relationship were presented.

Findings: Multi-variable Analyses

The focus of the multi-variable analyses was on building and testing multiple regression models that would be useful in predicting role performance of managers and economic success of cooperatives (as measured by profit/sales).

Because reliable alternate measures were not available for all the independent variables, all-variables models were developed for both performance and economic success to give an indication of the effect of independent variables that could not be included in the model building procedure. The effect of inclusion of Farm Service cooperatives was controlled in the first all-variables regression by using a dummy variable. The dummy variable seemed to be obscuring other relationships so the all-variables analysis was re-run, excluding the Farm Service cooperatives and the dummy variable. This process was then repeated for profit/sales as the dependent variable.

Attention was then directed to model building. The purpose of the model building was to derive a multi-variable model that would yield a high explanation of variance in the performance score with a minimum number of independent variables each of which would be significantly related to the dependent variable.

The stepwise regression technique was used with the first set of measures to build a regression model for performance which was cross-validated using the alternate set of measures. The same procedure was then followed for the development and cross-validation of a model to predict economic success of a cooperative.

Evaluation of the performance models

The all-variables model had a higher R^2 than the cross-validation model (the cross-validated stepwise model). But the cross-validation model had a higher F ratio and explained more variance per variable used. The all-variables model appeared to have the greater reliability of the two models, but the cross-validation model seemed to be more valid. All the variables in the cross-validation model were related to performance in the direction hypothesized on the basis of theory for the two-variable, zero-order relationships. This was not the case for all the statistically significant relationships in the all-variables model.

The most important variables in the all-variables solution for performance were self-confidence, managerial rank, board performance, and cooperative type. Of these, only cooperative type was included in the stepwise solution where it explains more variance than four of the other five variables in the model. The statistically significant variables in the cross-validation model were (in order of strength) rational value orientation, economic knowledge, education, and dominance.

Evaluation of the profit/sales model

The all-variables model for profit/sales had a higher R^2 than the cross-validation model, but the cross-validation model had a higher F ratio and explained more variance per variable used. The all-variables model had the greater reliability of the two models, but the cross-validation model appeared to have more validity.

The most important variables in the all-variables solution were cooperative type, role performance (relating negatively to profit/sales), economic knowledge, and managerial rank. The only statistically significant variables in the cross-validation were cooperative type and management experience.

The attempt to develop models for prediction of profit/sales was much less successful than the model building for performance. Many characteristics of managers were found to predict role performance, but few were found that would be useful in the prediction of economic success.

Network Analysis

A path analysis technique was applied to the data in which the effects of independent variables on each other was considered in addition to their effects on the criterion variables of role performance and profit/sales.

A general review of the path analysis technique was presented followed by a discussion of selection of variables and assumptions regarding variables.

A network of causal relations was hypothesized. One set of indicators (the validation set) was used to determine the variables and paths to leave in the postulated model. A second set of indicators (the cross-validation set) was used to test the model that was refined with the first set of measures.

The cross-validated network of relationships was then analyzed into direct and indirect effects of the variables in the network on the criterion variables.

Based on the data analysis with the validation set of measures (the initial analysis), the best predictors of role performance consisted of dominance, education, rational value orientation, cooperative type, and economic knowledge. The best predictors of profit/sales consisted of management experience, profit goal orientation, cooperative type, employee attitude, economic knowledge, and turnover. As was indicated in the two-variable and regression analyses, there is little

overlap between the best sets of predictors for role performance and economic success.

The cross-validation did not completely confirm the initial findings. The greatest difference between the cross-validation analysis and the initial findings was that two-thirds of the causal arrows from variables in the network to profit/sales were not cross-validated. Only two direct linkages (from cooperative type and management experience) to profit/sales remained in the final model.

All but one of the variables (cooperative type) that had direct relationships to performance in the initial model also were directly linked to performance in the final model. The strongest relationship was with rational value orientation followed by economic knowledge, education, and dominance.

Three of the four variables having direct effects on role performance also had indirect effects. Dominance and education had the greatest indirect effects on performance. None of the variables in the model had an indirect effect on profit/sales.

Two limitations of the final path model were noted which indicated that variables not identified had to be added to the model.

Conclusions

Prediction of task performance

The findings of the present study give some insight into the relation of individual and group factors to an individual's task performance.

Individual characteristics It was hypothesized that dominant individuals who emphasized rational and cognitive factors in their orientation to their environments would tend to display more efficacious role performance[1] than more submissive individuals who emphasized affective, non-rational aspects in their orientations. And, the more dominant, rational, Gesellschaft-oriented individuals tended to display superior task performance.

Among socialization factors education seems to be the best predictor of task performance.

When the relation of aspects of the personality system to performance was investigated, cognitive factors seemed to be better predictors of task performance than most motivational factors. Measures of role-related knowledge were found to be among the best predictors of task performance than most motivational factors. Measures of role-related knowledge were found to be among the best predictors of performance.

The only motivational factors found to be strongly

[1]The role performance focused on was almost exclusively task-oriented.

related to performance are dominance, self-confidence, and positive attitude toward employees. These three factors were strongly intercorrelated. More dominant individuals appear to have more favorable self-conceptions and to view others more favorably as well. They were also more strongly correlated with the knowledge measures than were any of the other motivational factors.

One of the best predictors of task performance was rational value orientation, a combination of several Gesellschaft-like value orientations.

In reviewing the above discussion it appears that the more general personality and socialization factors tend to be the best predictors of task performance; i.e. task performance can be better predicted with dominance, education, self-concept, rational value orientation, etc. than with more specific attributes. When these factors were viewed in a time perspective, the etiology of the task oriented individual appears as follows: through early socialization he develops a personality oriented toward dominance; as one way of satisfying this desire for dominance he strives to attain high educational goals through which he acquires both a more rational value orientation and greater knowledge which ultimately results in quality task performance.

Social system characteristics One of the highest correlations found in the present study was between social

system type and role performance. Two factors may account for this correlation. Certain types of systems may select more highly qualified managers, and/or these systems may mold managers into high performers. In either case the type of social system an actor is a part of is one of the best predictors of the quality of performance he is apt to display.

Three other social system variables were shown to be related to an actor's role performance. Both the amount of power afforded a manager by the system and the amount of training given to him were found to be positively related to his role performance. The amount of restrictions placed on him by his super-ordinates was found to be negatively related to task performance.

Prediction of social system goal attainment

Three categories of variables were employed in an attempt to predict system goal attainment: attributes of an incumbent of a focal position, role performance of that incumbent, and the action of sub-systems within the social system. None of these factors proved to be useful predictors of social system goal attainment. However, a number of factors should be considered in interpreting these findings. All social systems were treated in the data analysis as though they had the same goal; this was not the case. Attainment of the most frequently mentioned goal (attainment of a satisfactory net savings) might not adequately be assessed with the dependent variable employed

(a standardized profit measure) because it is not clear what is meant by "a satisfactory net savings". Another factor to be considered is that very few social system factors or situational factors were investigated and no data were obtained on social-emotional performance of the incumbent.

Given the above reservations the following conclusions about prediction of social system goal attainment can be drawn. The only attribute of the focal position incumbent found to be positively related to system goal attainment was amount of experience. Role performance of the incumbent was found not to relate to system goal attainment. The only sub-system factor found to be related to system goal attainment was turnover.

Suggestions for future research

Individual characteristics

Other status roles "Manager" is only one of several status-roles a manager occupies. No attention was given in this study to these other status-roles but they should be investigated in future studies for they may either complement or conflict with managerial role behavior.

Performance The role behavior focused on in this study has been essentially task-oriented in nature. There is a need to investigate aspects of social-emotional performance. These two basic types of performance, task and social-emotional, might be further subdivided and a study

conducted of the relationships between various attributes and types of performance, and the relationships between types of performance and social system goal attainment.

Further investigation of extra-system performance might also prove fruitful. A more careful investigation of managers' participation in community activities that are apt to affect the behavior of customers and potential customers should be undertaken.

Cognitive orientation Two important general cognitive factors, intelligence and symbolic skills, were not investigated. These factors should be investigated in future studies for two reasons--past research has indicated a relationship between these factors and various types of role performance, and much of the strong relationship between the cognitive factors and performance in the present study may merely be a reflection of intelligence and symbolic skill.

At the level of status role orientation there is a need to investigate the relationship between human relations knowledge and skills and role performance.

Value orientation A strong relationship was found between rational value orientation and role performance, but further investigation indicated that the strongest contributions to this relationship were being made by the values of progressivism and non-traditionalism. Prediction

might be improved in future studies by separating out these aspects of rational value orientation.

Motivational orientation General personality factors of dominance and self-confidence were found to be good predictors of role performance. These areas might be investigated further in the future. No attention was paid to general goals in this study. The hypothesis that congruence of general life goals with managerial role expectations leads to improved role performance should be tested by future research.

Further investigation of motivational orientation in the managerial status-role should also be undertaken. Managers' profit goals were assessed in the present study. In the future managers who try to maximize profit should be separated from managers who try to maximize profits for members by keeping margins low. In the present study the assumption was made that most managers would attempt to maintain high margins so members could profit from non-member business, but the extent to which this is the case has never been adequately assessed.

Further investigation of attitudes might also prove fruitful. Both self-attitudes and attitudes toward employees were found to be related to role performance. Other areas that might be investigated are attitudes toward the board of directors, customer-members, and customers.

System characteristics Because the system-type variable employed in this analysis was so strongly related to criterion variables, further classification of system types and investigation of their effects on role performance and performance outcomes seems warranted.

Only one social system element, power, was investigated in the present study. The effects of other elements should be investigated. Special attention should be directed to ends or goals; the profit satisficing assumption may be inaccurate.

Attention should be given to the general norms or values of social systems. Some evidence in the present study indicates that task-oriented managers may tend to produce more profit in Gemeinschaft-like cooperatives than do social-emotional-oriented managers, but the relationship may be reversed in more Gesellschaft-like cooperatives.

Further study of social system processes should also be undertaken. Socialization factors were assessed in the present study, but there is a need to partition out and assess the effects of different types of training.

Some investigation of systemic linkage was done, but further study of advisor use and the effects of different types of advisors is needed.

Performance of sub-systems was not assessed sufficiently. More careful attention should be directed to the performance

of the board of directors. There is also a need to investigate the effects of type and quality of employees. It may be important to know what actors are performing task and social-emotional roles within the system and how they complement the manager. Thus, if other actors are performing major types of task roles, a different type of manager might be required for maximal goal attainment than in situations where this is not the case.

Another very important factor suggested by Fiedler's findings is the amount of support given to the manager by sub-systems--especially the board and the assistant manager.

Suggested changes in methods A cross-sectional design was employed in the present study in which an attempt was made to predict success of managers. This restriction of range severely limits the strength of relationships that can be found. In essence the attempt was made in the present study to predict success of already successful managers by virtue of the fact that they were still on the job. The generalizability of these results is also limited. Generalizing the results to selection of new managers would seem to be justified only in the case of socialization factors. Further generalization would be of questionable validity for the population of managerial candidates may be considerably different from the population of experienced managers. To avoid some of these problems there is need for a longitudinal study in which data

are first gathered on a sample of managerial candidates, and measures of their success are obtained over a period of years.

Although regression analysis proved fruitful in the present study, a number of recent studies in leadership and management have found that predictive power can be increased considerably by using moderator variables, i.e. the prediction of success with a number of independent variables given certain situations defined by moderators. Some use was made of this technique in further analysis of data from the present study in which it was found that dominance was positively correlated with economic measures for small cooperatives and negatively correlated with these measures when attention was directed to large cooperatives. Further use should be made of similar types of analysis.

There were a number of areas in the present study in which no adequate indicators of theoretical concepts were available. Improvements should be made in future studies. More adequate measures of socialization factors are needed. These factors should be particularly important in attempts to predict the success of job applicants.

Improvements need to be made in measures of organizational participation. In the present study the range was restricted on one measure, and the information gathered on types of organizations participated in was not sufficiently extensive.

Measures of board performance should be obtained from the board of directors if possible. As measured in the present study, a manager's expectations for his board's performance could have had a considerable effect on his evaluation. The advisor-use measure is also inadequate; more specific data are needed.

As mentioned earlier, perhaps the most needed improvement is in a measure of economic success. Although the most frequently mentioned goal of managers and board chairmen in this study was the attainment of satisfactory net savings, there was no indication as to what constituted a satisfactory level of net savings, nor was there wide agreement on this goal. Since some cooperatives may elect to keep margins low rather than return sizable patronage refunds to members, a better measure of economic success than the one employed in the present study (profit/sales) might be a measure of efficiency, in which physical output would be assessed relative to the cost of labor and capital inputs.

Relevance of findings to boards of directors

Results of the present study should be of some utility to boards of directors in decision making on selection and training of managers.

No strong relationship between training and performance was observed. The greatest effect of training on managerial performance seems to be an indirect one through knowledge.

If boards are concerned with producing high profits for their cooperatives there is some evidence to indicate that providing economic training for the manager might to some small degree assist in the attainment of this goal. The data suggest that if boards are unhappy with their present manager they might be better off selecting a new one rather than attempting to train the present one, but much more research will have to be done before any confidence can be placed in this conclusion.

If a board is interested in obtaining a manager who will exhibit quality task performance, the variables in the cross-validated stepwise regression model might be most useful for selection purposes. Since there are only four variables in this model, obtaining data for prediction would be considerably less expensive and time consuming than with the other models, and results showed that additional variables made little improvement in predictive ability.

The variables in this model are rational value orientation, economic knowledge, education, and dominance. Decisions could be made among candidates by substituting candidates' scores on the measures of these variables into the regression equation, and multiplying the scores by their respective regression coefficients to obtain predictions of performance scores.

However, one must remember that these four variables

account for less than 40 percent of the variance in performance scores, and use in this manner would be generalizing from a sample of experienced managers to a sample of managerial candidates, so a considerable amount of error in prediction would be expected.

If a board is concerned with selecting a manager who can help them maximize profits, the data indicate that they should select an experienced manager. No other significant and consistent predictors of profit were found. And selection on this basis would not be a great improvement over change.

The findings also suggest that managers tend to perform better if given more power by their boards, and if their boards place fewer restrictions on them. There was no strong relationship between the quality of the board's performance and the manager's performance or profit, but further investigation is necessary in this area.

Relevance of findings to managers

Although the primary practical application of the present study would most probably be in managerial selection, managers might find the results useful in selection of assistant managers and department heads, although considerable caution should be exercised in generalizing results to this great an extent.

If managers are concerned with improving their own per-

formance, they might consider attending training programs. Although the relationships are not strong, knowledge that could be attained through training seemed to be the only factor aside from cooperative type that seemed to be consistently related to both performance and performance outcomes in terms of economic success.

Although the relationship between employee turnover and economic success was not cross-validated, there were enough data in the present study and in research reported to indicate that employee turnover is costly and should be avoided. What should be done to avoid turnover is not clear from these data. No relationship was found between managerial performance and employee turnover, but more knowledgeable managers tended to have less turnover.

In summary, some success was attained in delineating factors relating to managerial role performance, and some of these factors might profitably be employed in prediction of this aspect of managerial success. Little success was attained in delineating factors that would be useful in the prediction of economic success of cooperatives. Much more study is needed in both areas.

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APPENDIX A

The following are the instructions which preceded the attitude statements in the questionnaires:

> On the following twelve pages are a number of statements about business management. We are interested in your feelings or opinion about each statement. You will probably agree with some of these statements. That is, some statements will express your own opinions or feelings about managing. Other statements will express feelings opposite to yours.
>
> After you have read each statement, please circle the "A" (agree) if you agree with the statement or the "D" (disagree) if you disagree with the statement. Once you have made this decision, please indicate how strongly you agree or disagree with the statements by circling one of the numbers which appears to the right of each statement. If it really doesn't make much difference to you if you agree or disagree with the statement, circle 1. If you very strongly agree or disagree with the statement, circle 5. For some statements, the numbers 2, 3 or 4 may better describe how strongly you agree or disagree with the statement. When this is the case, circle the appropriate number.
>
> For example, consider the statement:

All men are created equal.	A D	1 2 3 4 5

> Do you agree or disagree with this statement? Circle "A" ("D"). How strongly do you agree (disagree) with this statement? Circle the appropriate number.
>
> Please be sure to circle both a letter and a number after each statement, unless you are completely undecided whether you agree or disagree with the statement. In that case, circle both "A" and "D", but do not circle any of the numbers. This response indicates that you neither agree nor disagree with the statement.
>
> These statements are in no way designed to be a test. There are no right or wrong answers to the statements. The answers which will be most helpful to this research project are the ones which best reflect your own feelings about each of the statements.

APPENDIX B

This is a list of the items comprising the employee attitude scales. The direction in which each item was scored is shown.

Employee Attitude Scale #1

Item number	Scoring	Item
		Employee production can be increased by...
1	+	...periodically informing employees of their progress on their jobs.
2	+	...consulting employees on decisions that affect them.
3	+	...seeing that employees feel that they are doing something important.
4	+	...putting as much challenge into jobs as is possible.
5	+	...being interested in the personal well-being of your employees.
6	+	...telling employees why their work is important.

Employee Attitude Scale #2

		Employee production can be increased by...
1	-	...criticizing employees in public so they can be taught a lesson.
2	-	...doing delegated tasks yourself when they have not been completed.
3	-	...punishing employees for mistakes instead of rewarding them for superior achievement.
4	-	...telling employees that they're doing good work whether they are or not.

Employee Attitude Scale #3

Item number	Scoring	Item
		Employee production can be increased by...
1	+	...seeing that employees feel that they are doing something important.
2	-	...doing delegated tasks yourself when they have not been completed.
3	+	...putting as much challenge into jobs as is possible.
4	+	...being interested in the personal well-being of your employees.
5	-	...punishing employees for mistakes instead of rewarding them for superior achievement.
6	+	...informing workers when a change is coming up that will affect their jobs.
7	+	...telling employees why their work is important.
8	-	...telling employees that they're doing good work whether they are or not.

APPENDIX C

The items employed in the job satisfaction indices are listed below.

Job Satisfaction Scale (Index #1)

Item number	Item
1	How satisfied are you with the authority you have been given by your board of directors to do your job?
2	How satisfied are you with your present position when you compare it to similar managerial positions in the state?
3	How satisfied are you that the people of your community give proper recognition to your work as a manager of a cooperative?
4	How satisfied are you with your present salary?
5	How satisfied are you with the amount of time which you must devote to your job?
6	How satisfied are you with your present job when you consider the expectations you had when you took the job?
7	How satisfied are you with the level of challenge and responsibility you are faced with in your present position?
8	How satisfied are you with the amount of authority you are given for the tasks you are expected to perform?

Job Satisfaction Index #2

1	How satisfied are you with your present position when you compare it to similar managerial positions in the state?

Item number	Item
2	How satisfied are you with the progress that you are making toward the goals which you set for yourself in your present position?
3	How satisfied are you with the amount of time which you must devote to your job?
4	How satisfied are you with your present job when you consider the expectations you had when you took the job?
5	How satisfied are you with the work that you do as the manager of a cooperative?

Job Satisfaction Index #3

1	How satisfied are you with the authority you have been given by your board of directors to do your job?
2	How satisfied are you that the people of your community give proper recognition to your work as a manager of a cooperative?
3	How satisfied are you with your present salary?
4	How satisfied are you with the amount of interest shown by the community in its cooperative?
5	How satisfied are you with the level of challenge and responsibility you are faced with in your present position?
6	How satisfied are you with the amount of authority you are given for the tasks you are expected to perform?

APPENDIX D

The items employed in the product knowledge index are listed below.

Chemical Knowledge

Item number	Item
1	The U.S. Dept. of Agriculture has the responsibility to enforce the proper use of insecticides. (Correct answer = disagree)
2	Chlordane is not a recommended residual fly control which can be sprayed on the walls in a dairy barn. (Correct answer = agree)
3	The recommended dosage for spraying 2,4-D on corn at "lay by" time using a drop-extension nozzle is 1/2 lb. or one pint of ester per acre. (Correct answer = disagree)
4	When Amino-triazole is applied to thistle patches in a pasture, it is recommended that livestock not be allowed on the treated area for eight months. (Correct answer = agree)
5	Amiben is an effective perennial weed killer in soybeans. (Correct answer = disagree)
6	Corn treated with Toxaphene should not be made into silage. (Correct answer = agree)
7	Two pounds per acre of actual Aldrin or Heptachlor which is broadcast and disked-in will control all major soil insects attacking corn on sod ground. (Correct answer = agree)

Item number	Item
8	Under adequate moisture conditions, fertilizer applications which increase corn yields can: a. decrease the pounds of water needed to produce one bushel of corn . . . . . 1 b. increase the pounds of water needed to produce one bushel of corn . . . . . 2 c. decrease the total amount of water used by the crop . . . . . 3 d. decrease water loss through corn leaves . . . 4 (Correct answer = a)
9	Potash deficiency symptoms on corn can be recognized by a: a. light green color of the corn field in general . . . . . 1 b. purpling of the upper corn leaves . . . . . 2 c. browning of the outer margins of the lower corn leaves . . . . . 3 d. yellowing of the mid-ribs of the lower corn leaves . . . . . 4 (Correct answer = c)
10	If used in the row of corn, the minimum percentage of water soluble phosphorus should be: a. 80% . . . . . 1 b. 50% . . . . . 2 c. 20% . . . . . 3 d. 100% . . . . . 4 (Correct answer = b)
11	Fertilizer nutrients, if needed: a. can be insurance against drought for corn if subsoil water is adequate . . . . . 1 b. cause corn plants to use less total water . . 2 c. draws corn roots toward it when placed deep in the soil. . . . . 3 d. cause lower leaves of corn to "fire" in dry weather . . . . . 4 (Correct answer = a)

Item number	Item
12	A high percentage of water soluble phosphorus is desirable for: a. phosphorus being plowed down for corn . . . . 1 b. top dressing established legume meadows . . . 2 c. row fertilizer for corn . . . . . 3 d. application on oat-legume seedings . . . . . 4 (Correct answer = c)
13	Maximum chemical availability of P in fertilizer: a. occurs for low water soluble materials when they are finely ground and banded in the soil . . . . . 1 b. occurs for low water soluble materials when pelleted and widely dispersed in the soil . . 2 c. occurs for high water soluble material when hill dropped or band applied . . . . . 3 d. occurs for high water soluble materials when finely ground and widely dispersed in the soil . . . . . 4 (Correct answer = c)
14	When sampling soils in Iowa: a. take one core for every 10 acres . . . . . 1 b. separate fields into separate areas based on soil differences or differences in past management . . . . . 2 c. subsoil sampling is recommended . . . . . 3 d. allow samples to dry thoroughly before sending to the laboratory . . . . . 4 (Correct answer = b)
15	In taking soil samples, the greatest mistake is to: a. mix soil from a wet area and a sloping area into one sample . . . . . 1 b. take too few cores from a single soil type. . 2 c. take too many cores from a single soil type . . . . . 3 d. include more than ten acres into one sample . 4 (Correct answer = a)

Item number	Item
16	Nitrogen fertilizer can be applied in different ways. Which one of the following application methods is most effective in increasing corn yields assuming proper application equal N rates, similar weed control and normal rainfall? a. plow-down application . . . . . 1 b. disked-in on plowed ground . . . . . 2 c. pre-plant injections . . . . . 3 d. side-dressing up to the time the corn is 15 inches tall . . . . . 4 e. all methods are equally effective . . . . . 5 (Correct answer = e)
17	If a farmer elects to apply all of his fertilizer for corn as a plow-down application at the medium rate, under which one of the following conditions could he expect the most effective use of his fertilizer? a. a wetter than average growing season . . . . 1 b. growing season with temperatures higher than average . . . . . 2 c. a dryer than average growing season . . . . . 3 d. growing season with temperatures lower than average . . . . . 4 (Correct answer = c)

APPENDIX E

The balance sheet and income statement that were presented to the respondents on a card in conjunction with the financial knowledge questions are presented below.

CARD 14

BALANCE SHEET

ASSETS

Current Assets		
Cash	$135,000	
Accounts Receivable	65,000	
Inventory	100,000	$300,000
Fixed Assets		
Buildings and Equipment		1,200,000
TOTAL ASSETS		$1,500,000

LIABILITIES AND MEMBERS EQUITY

Current Liabilities	$300,000
Long-Term Liabilities	600,000
Members' Equity	600,000
TOTAL LIABILITIES AND MEMBERS' EQUITY	$1,500,000

STATEMENT OF OPERATIONS

Sales	$1,400,000
Cost of Sales	1,300,000
GROSS COMMODITY SAVINGS	100,000
Other Income	100,000
GROSS SAVINGS AND INCOME	$ 200,000
EXPENSES	130,000
NET SAVINGS FROM OPERATIONS	$ 70,000

Item number	Scoring	Item
		Mental Activity Value Orientation
6	+	Intelligence is more important in management than in most other business activities.
7	+	Hours spent by a manager evaluating and making future plans for his business are generally more profitable than hours spent helping with the mixing or grinding operations.
8	-	A good manager is the one who can use his head as well as his back.
9	-	Thinking, reading, and planning are <u>not</u> really important to me in managing this business.
		Scientific Value Orientation
10	+	The influence a manager exerts really decides the financial outcome of a cooperative.
		Risk-taking Value Orientation
11	-	A manager should always have a contingency fund in case of emergency.
		<u>Rational Value Orientation Index #2</u>
		Economic Value Orientation
1	-	One of the major problems in our country today is that people are too concerned with money and the things money will buy.
2	+	People who have been successful financially generally are more interesting people with whom to visit.
3	-	There are more important things in life than trying to make a few extra dollars.

Item number	Scoring	Item
		Independent Value Orientation
4	-	Managing would be extremely difficult without the advice and help of my board.
		Mental Activity Orientation
5	-	If a man is going to hire labor he should be willing to work right along side the man he's hired.
6	-	Quite a few managers would be better off if they would spend less time going to meetings and more time in their business.
7	-	Physical work is more satisfying and rewarding to me than mental activity.
		Scientific Value Orientation
8	-	There is so much personal satisfaction in being a manager that income becomes relatively unimportant.
		Risk-taking Value Orientation
9	+	I regard myself as the kind of person who is willing to take a few more risks than the average manager.
10	-	A manager should try to reduce the risk in his business by keeping his operation diversified, even though it may mean the loss of some future income.
11	+	If a man wants a thing done right, he must do it himself.

APPENDIX F

The items included in the rational value orientation indices are listed below. The scales developed by Hobbs (1963) from which they were taken and modified are also listed.

Rational Value Orientation Index #1

Item number	Scoring	Item
		Economic Value Orientation
1	+	The major reason for going to college is to be able to make a better income.
2	-	There are so many desirable things in life that a person can afford to get along on a lower income to maintain these advantages.
		Independent Value Orientation
3	-	A new manager would do well to find out the opinions of more experienced managers before making decisions.
4	+	Having the freedom to make up my own mind is, to me, one of the major advantages in management.
5	-	It is more important to me to be known as a person who gets along well with others and has a lot of friends rather than a person who likes to make decisions for himself.

APPENDIX G

The items employed in the role performance indices are listed below. Functional categories are indicated for the first two indices.

Role Performance Index #1

Item number	Item
	Organizing
1	What factors do you take into consideration in making decisions concerning how your business is organized into departments and functions. (Include decisions such as those concerning functions to be performed and departments to have.)
2	What methods do you use to determine the number and qualifications of the employees needed in your business firm?
	Planning
3	Within the lines, how do you determine what brands and qualities of merchandise to handle?
4	Most businesses attempt to create a favorable image with their customers. What are the essential features or ingredients in the image you are trying to create for this business?
5	On what basis do you select your wholesale sources and outlets?
6	When purchasing supplies for resale, what factors (other than price and quantity) do you consider?

Item number	Item
	Controlling
7	Do you have a sales plan or projection for the next operating year? a. have one written down b. carry one around mentally c. none
8	Do you prepare a budget for your next operating year? a. No b. Yes (If yes) What types of budgets do you use and how are they employed?
	Coordinating
9	Which one of these statements best describes the way you feel about key employee relationships with patron members? a. they have a responsibility to keep themselves well informed and make recommendations on all our major product lines b. they have a responsibility to pass on only that information about our major product lines which is requested by the customer c. they should be extremely cautious in making recommendations about any major product line since a poor recommendation could result in a loss of customers d. they should provide the products requested by customers, but should make no recommendations about their uses
10	Selling is a matter of getting your ideas and product information to purchasers. What factors do you take into consideration in getting this job done?

Item number	Item
	Directing
11	What techniques do you include to get top performance out of your employees?
12	How frequently do you work alongside your employees? a. never b. rarely c. occasionally d. frequently

Role Performance Index #2

Organizing

1	How do you determine the responsibilities and work loads of each of your employees?
2	What type of job descriptions do you have for each employee position in your business? a. do not write job descriptions b. have verbal job descriptions for all employees c. have written job descriptions for supervisory employees only d. have written job descriptions for all employees

Planning

3	In making a major decision, what steps or processes do you go through?
4	Once a major decision to make a change has been made, what are some of the things you would do to insure that the implementation of this decision will be successful? Include planning for change, and planning for the period after the change has been made.

Item number	Item
5	What are the major factors you take into consideration in deciding (or in making recommendations to your board) to add or to drop existing lines of business or reorganizing your business to place greater emphasis on a given line?
6	How do you protect yourself against market price changes on products and supplies in inventory?
	Controlling
7	What method or methods do you use in your business for appraising the performance of employees in the jobs to which they are assigned?
8	What kinds of ratios do you use to determine how efficient you are in your business? What should these ratios be for your business? What are the factors you take into consideration in deciding on what these ratios should be?
	Coordinating
9	How is information in your business communicated from you to your employees?
10	As you think of merchandising your products, do you classify your farmer customers into different groups and use different selling approaches on them? a. No b. Yes (If yes) You mentioned classifying. What are the major factors you take into consideration in classifying them?
	Directing
11	What methods are used to train and develop your employees? Please explain each of these:

Item number	Item
12	How frequently do you help employees with important tasks to make sure they're done well? a. never b. rarely c. occasionally d. frequently

Role Performance Index #3

The items employed in role performance index #3 are listed below with their accompanying factor loadings. Items 8 - 18 and 20 - 26 were coded by the certainty method. In the factor analysis, responses to items 1 - 7 and 19 were assigned the integer weights indicated. When the index was computed these integers were divided by the item standard deviations to yield Z scores. These standard scores are indicated in the codes accompanying these items.

Item number	Factor loading	Item
1	.4630	In making a major decision, which of the statements on CARD 16[1] best describes the methods you use in evaluating alternatives? a. rely solely on managerial judgment in making most decisions 1

[1]Respondents were given a card containing the response alternatives. This procedure was also followed for several other questions in the schedule.

Item number	Factor loading	Item
		b. work out potential profits (expected sales and expenses) but do not have detailed records which can be used as a base . . . . . 2 c. work out potential profits (expected sales and expenses) from records mentally . . . . . 3 d. work out potential profits (expected sales and expenses) from records on paper . . . . . 4 Code -1.982 = rely solely on managerial judgment in making most decisions -1.097 = work out potential profits (expected sales and expenses) but do not have detailed records which can be used as a base - .212 = work out potential profits (expected sales and expenses) from records mentally .673 = work out potential profits (expected sales and expenses) from records on paper
2	.5708	Have you given any consideration to probable future sales trends in your trade area? No Yes (If yes) Which of the statements on CARD 18 best describes the methods you used? a. made projections on the basis of personal judgment based on day-to-day knowledge of business potential . . . 1 b. worked out potential sales on paper or mentally by using some of the available sales records in my business . . . . . 2 c. worked out mentally the potential sales using business records and other available data . . . . . 3 d. worked out on paper the potential sales using business records and other available data 4

Item number	Factor loading	Item
		Code -1.500 = made projections on the basis of personal judgment based on day-to-day knowledge of business potential - .638 = worked out potential sales on paper or mentally by using some of the available sales records in my business .224 = worked out mentally the potential sales using business records and other available data 1.086 = worked out on paper the potential sales using business records and other available data
3	.5749	Does your cooperative have a written organization chart? No . . . . . 1 Yes . . . . . 2 Code - .801 = No 1.253 = Yes
4	.4457	What type of job descriptions do you have for each employee position in your business? a. do not write job descriptions . . . . 1 b. have verbal job descriptions for all employees . . . . . 2 c. have written job descriptions for supervisory employees only . . . . . 3 d. have written job descriptions for all employees . . . . . 4 Code -1.694 = do not write job descriptions - .407 = have verbal job descriptions for all employees .893 = have written job descriptions for supervisory employees only 2.162 = have written job descriptions for all employees

Item number	Factor loading	Item
5	.4457	Do you have a sales plan or projection for the next operating year? a. have one written down . . . . . 3 b. carry one around mentally . . . . . 2 c. none . . . . . 1 Code -1.249 = none .053 = carry one around mentally 1.355 = have one written down
6	.7280	Do you compare actual results to your budget? No . . . . . 1 Yes . . . . . 2 Code - .779 = No 1.282 = Yes (If yes) How often do you make this comparison? * Interviewer: Do not give alternatives to respondent. Code - .666 = 0 times per year - .470 = 1 time per year - .274 = 2 times per year .118 = 4 times per year .510 = 6 times per year 1.687 = 12 times per year
8	.6093	How do you decide how much money to spend on advertising.
9	.6803	Do you prepare a budget for your next operating year? No Yes (If yes) What types of budgets do you use and how are they employed?

Item number	Factor loading	Item
10	.5731	What factors do you take into consideration in making decisions concerning how your business is organized into departments and functions. (Include decisions such as those concerning functions to be performed and departments to have.)
11	.6235	How is information in your business communicated from you to your employees?
12	.6323	What methods are used to train and develop your employees?
		Please explain each of these:
13	.4141	In making a major decision, what steps or processes do you go through?
14	.4919	Once a major decision to make a change has been made, what are some of the things you would do to insure that the implementation of this decision will be successful? Include planning for change, and planning for the period after the change has been made.
15	.4240	How will you determine whether the change is successful? * Probe to see if plans are made in advance for evaluation.
16	.4592	We are interested in knowing about your specific policies or criteria concerning replacement and repair of facilities and equipment. For example, let's take a truck that you use for farm deliveries. What factors do you take into consideration in determining how long to keep the truck, in other words, when to replace it?
17	.4964	What do you take into consideration in determining if you are going to need to borrow money and the amount you need to borrow for the investments considered?

Item number	Factor loading	Item
18	.5927	What kinds of ratios do you use to determine how efficient you are in your business? What should these ratios be for your business? What are the factors you take into consideration in deciding on what these ratios should be?
19	.4831	Has your co-op put its credit policy in writing? No . . . . . 1 Yes . . . . . 2 Code -1.975 = No .506 = Yes
20	.4334	When purchasing supplies for resale, what factors (other than price and quantity) do you consider?
21	.5258	What are the major factors you take into consideration in deciding (or in making recommendations tc your board) to add or to drop existing lines of business or reorganizing your business to place greater emphasis on a given line?
22	.4881	Do you have a system of keeping track of inventory levels and changes in these levels? No Yes (If yes) What type of system?
23	.5509	Do you use monthly financial statements to help you perform your managerial tasks? No Yes (If yes) In what way do you use them?

Item number	Factor loading	Item
24	.4920	Selling is a matter of getting your ideas and product information to purchasers. What factors do you take into consideration in getting this job done?
25	.5199	Most businesses attempt to create a favorable image with their customers. What are the essential features or ingredients in the image you are trying to create for this business?
26	.4873	Have you ever used the field representatives of wholesale companies to assist you in this business? Include such things as: financial assistance, technical information, rental equipment, resale help, pamphlets and bulletins, financing on credit for customers, pricing policy, etc. No Yes (If yes) In what way(s) were they of assistance to you?

APPENDIX H

List of Variables

X_1 = Education Index

X_2 = Favorable Life Experiences Index

X_3 = Management Experience Index

X_4 = Dominance Index #1

X_5 = Dominance Index #2

X_6 = Achievement Index

X_7 = Self-confidence Index

X_8 = Profit Goal Orientation Index #1

X_9 = Profit Goal Orientation Index #2

X_{10} = Profit Goal Orientation Index #3

X_{11} = Managerial Rank Index

X_{12} = Employee Attitude Scale #1

X_{13} = Employee Attitude Scale #2

X_{14} = Employee Attitude Scale #3

X_{15} = Perceived Power Index

X_{16} = Management Information Index

X_{17} = Job Satisfaction Scale--Index #1

X_{18} = Job Satisfaction Index #2

X_{19} = Job Satisfaction Index #3

X_{20} = Attitude Toward Competitive Situation Index

X_{21} = Product Knowledge Index

X_{22} = Economic Knowledge Index #1

X_{23} = Economic Knowledge Index #2

X_{24} = Economic Knowledge Index #3

X_{25} = Rational Value Orientation Index #1

X_{26} = Rational Value Orientation Index #2

X_{27} = Rational Value Orientation Index #3

X_{28} = Organizational Participation Index #1

X_{29} = Organizational Participation Index #2

X_{30} = Organizational Participation Index #3

X_{31} = Role Performance Index #1

X_{32} = Role Performance Index #2

X_{33} = Role Performance Index #3

X_{34} = Power Index

X_{35} = Employee Training Index

X_{36} = Management Training Index

X_{37} = Board Performance Scale

X_{38} = Board Restrictions Index

X_{39} = Employee Turnover Index

X_{40} = Advisor-use Index

X_{41} = Profit/Sales Index #1

X_{42} = Profit/Sales Index #2

X_{43} = Profit/Sales Index #3

X_{44} = Cooperative Type

Table 75. Intercorrelations of empirical measures[a]

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}	x_{21}
x_1	-	.26	-.20	.44	.40	.82	.12	-.05	-.01	.02	-.10	.20	.17	.12	.14	.12	.10	-.05	.02	-.21	.33
x_2	.28	-	.15	.06	.01	-.03	-.20	.02	-.05	-.15	-.12	.04	-.05	.04	.01	.10	.15	.17	.10	-.02	.08
x_3	-.20	.13	-	-.15	-.02	-.12	-.11	.09	.07	.11	-.02	-.09	-.18	.16	.13	-.05	.11	.15	.05	-.03	.03
x_4	.23	.07	-.13	-	.45	.31	.29	-.05	.01	-.04	-.03	.34	.33	.40	.22	.10	.03	-.02	.07	-.09	.44
x_5	.40	-.04	-.02	.51	-	.11	.46	-.08	.09	-.01	-.34	.17	.21	.23	.32	-.00	.12	.90	.20	-.16	.20
x_6	.02	.03	-.05	.24	.20	-	.14	.10	.66	.08	-.00	.22	.16	.24	.08	-.05	-.05	.01	-.06	-.12	.20
x_7	.07	-.19	-.09	.28	.50	.11	-	.02	.07	.05	-.06	.03	.05	.08	.17	.01	.07	.11	.11	-.09	.10
x_8	-.07	-.02	.01	-.05	.09	.20	.05	-	.56	.90	-.09	-.20	-.10	-.20	-.15	-.05	-.02	-.07	-.10	-.01	.11
x_9	-.04	-.13	.06	.04	.09	.13	.09	.56	-	.87	-.13	-.05	-.08	-.13	.06	-.03	.06	.02	.09	.01	-.10
x_{10}	-.07	-.09	.06	-.02	.09	.15	.07	.90	.90	-	-.12	-.14	-.13	-.02	-.05	-.05	-.02	-.03	-.02	.01	.03
x_{11}	-.13	-.11	-.03	-.04	-.40	-.07	.22	-.07	-.09	-.08	-	.11	.06	.06	-.01	-.04	-.05	-.11	-.02	-.07	.01
x_{12}	.15	.05	-.11	.34	.23	.20	.03	-.22	-.10	-.20	.07	-	.40	.83	.24	.33	.25	.16	.21	-.06	.24
x_{13}	.17	-.03	-.17	-.02	.30	.12	.08	-.09	-.08	-.13	.06	.40	-	.78	.31	.20	.07	.06	.12	-.07	.09
x_{14}	.22	.04	-.16	.02	.30	.20	.10	-.20	-.01	-.21	.04	.81	.80	-	.32	.33	.23	.20	.25	-.12	.21
x_{15}	.14	.08	.14	.20	.40	.07	.15	-.17	.08	-.05	-.01	.31	.34	.44	-	.16	.11	.14	.15	-.06	.02
x_{16}	.08	.06	-.06	.07	-.01	-.09	-.01	1.0	-.04	-.04	-.05	.33	.20	.32	.20	-	.05	.10	-.01	.02	-.01
x_{17}	-.02	.13	.15	.01	.10	-.07	.07	-.06	-.03	-.07	-.02	.20	.05	.12	.20	-.01	-	.81	.86	-.12	.12
x_{18}	-.12	.11	.23	-.03	.03	.02	.11	-.10	-.10	-.12	-.05	.15	.42	.17	.20	.08	.80	-	.86	-.12	.12
x_{19}	-.03	-.01	.11	.05	.20	-.08	.13	-.10	.03	-.07	.11	.17	.10	.21	.20	-.08	.84	.60	-	-.02	.12
x_{20}	-.21	-.31	-.04	-.11	-.20	.10	-.04	-.04	.02	.00	.12	-.03	-.06	-.10	-.04	.03	-.16	-.02	-.30	-	-.13
x_{21}	.30	.06	.05	.40	.24	.06	.06	.13	.00	.05	-.10	.15	.07	.16	.03	-.07	.07	-.09	-.10	-.13	-
x_{22}	.16	-.04	-.16	.33	.40	.32	.20	.02	.08	.04	-.16	.03	-.02	.02	-.02	-.01	-.05	-.01	.01	-.20	.22
x_{23}	.03	-.04	.02	.12	.27	.20	.15	.13	.20	.18	-.27	-.10	-.01	-.05	-.00	-.01	-.07	-.04	.24	-.27	-.01
x_{24}	.11	.00	-.09	.30	.40	.30	.20	.08	.20	.13	-.30	-.04	-.02	-.02	.00	-.01	-.02	-.03	.14	-.28	-.14
x_{25}	.19	.14	.03	.20	.30	.22	.09	-.06	.03	.02	-.13	.07	.12	.11	.20	.04	-.23	-.09	-.21	-.11	.09
x_{26}	.38	.14	-.12	.40	-.02	.02	.30	.08	.12	.11	-.20	.22	.33	.32	.30	.29	-.11	-.06	-.10	-.26	.01
x_{27}	.36	.11	-.06	.01	.50	.24	.23	.02	.10	.06	-.21	.20	.06	.30	.31	.21	-.20	-.09	-.20	-.26	.10
x_{28}	.09	.15	-.09	.13	.13	.03	.06	.10	.10	.11	.05	.20	.26	.30	.11	-.08	-.08	-.03	.11	-.11	-.01
x_{29}	.25	.08	-.13	.04	.12	-.01	.12	-.10	-.06	-.10	.16	.20	.30	.32	.10	.02	-.01	-.11	.10	-.20	-.03
x_{30}	.20	.11	-.14	.13	.14	.10	.17	.04	.03	.03	.07	.24	.32	.35	.11	-.07	.05	-.06	.11	-.15	-.64
x_{31}	.33	.29	-.18	.41	.50	.23	.33	-.04	-.40	-.03	-.30	.18	.09	.22	.30	.16	-.03	.10	-.09	-.04	.10
x_{32}	.39	.24	-.20	.50	.50	.21	.20	-.03	.10	.05	-.26	.23	.11	.30	.23	.06	.04	.15	.76	-.20	.20
x_{33}	.37	.19	-.24	.40	.50	.20	.40	-.04	.04	.05	-.31	.30	.14	.32	.30	.13	.15	.16	.13	-.10	.20
x_{34}	.05	.09	-.10	.20	-.11	.11	.05	.03	.08	.07	.10	.16	.01	.13	.24	.05	.12	.05	.16	-.04	.20
x_{35}	.07	.13	-.23	.13	.12	.24	.10	.11	-.10	.06	-.10	.13	.20	.20	.02	.10	-.00	-.05	.09	-.24	-.03
x_{36}	.18	.37	.20	-.02	.10	-.20	-.06	.04	-.13	-.05	.05	.45	.12	.90	.20	.19	.22	.21	.17	-.12	.10
x_{37}	.18	.17	.06	.11	.21	.13	.02	-.20	-.10	-.20	-.13	.20	-.03	.12	.20	-.07	.55	.40	.50	-.22	.60
x_{38}	-.14	.18	.12	.20	-.03	-.05	-.06	-.04	.04	-.01	-.04	.31	.18	.31	.12	.12	.41	.20	.36	-.20	-.60
x_{39}	.05	-.09	.12	-.12	.01	-.30	-.01	-.05	-.04	-.05	.02	-.13	-.10	.10	-.00	-.15	.00	-.08	-.02	.24	-.84
x_{40}	.05	-.11	-.02	-.10	.02	-.20	-.04	-.09	.02	.09	-.05	-.03	.07	.01	-.03	.08	-.01	-.20	-.15	-.12	.10
x_{41}	-.03	.12	.32	-.02	.02	-.01	-.01	-.10	-.00	-.05	-.112	-.14	.01	.41	.09	-.02	-.07	.02	.09	-.15	.30
x_{42}	-.12	.02	.29	.01	.01	-.01	-.08	-.10	.00	-.05	-.16	-.23	-.08	-.13	.05	-.09	-.16	-.06	-.00	-.12	.20
x_{43}	.08	.20	.29	-.05	.01	-.01	-.02	-.06	-.02	-.05	-.12	-.00	.09	.06	.10	.03	.02	.08	.16	-.13	.30

[a]The upper triangle contains intercorrelations of measures based on the total sample (n=95). The lowe
excluded.

.0	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}	x_{21}	x_{22}	x_{23}	x_{24}	x_{25}	x_{26}	x_{27}	x_{28}	x_{29}	x_{30}	x_{31}	x_{32}	x_{33}	x_{34}
)2	-.10	.20	.17	.12	.14	.12	.10	-.05	.02	-.21	.33	.21	.11	.20	.20	.40	.35	.14	.25	.23	.36	.40	.37	.41
L5	-.12	.04	-.05	.04	.01	.10	.15	.17	.10	-.02	.08	.04	.06	.05	.08	.11	.12	.16	.12	.14	.24	.22	.17	.13
L1	-.02	-.09	-.18	.16	.13	-.05	.11	.15	.05	-.03	.03	-.17	.17	-.10	.02	-.15	-.09	-.10	-.08	-.12	-.14	-.20	-.20	-.08
)4	-.03	.34	.33	.40	.22	.10	.03	-.02	.07	-.09	.44	.34	.21	.33	.09	.38	.33	.20	.08	.18	.41	.44	.40	.14
)1	-.34	.17	.21	.23	.32	-.00	.12	.90	.20	-.16	.20	.38	.24	.37	.25	.42	.41	.10	.08	.11	.40	.40	.37	.12
)8	-.00	.22	.16	.24	.08	-.05	-.05	.01	-.06	-.12	.20	.32	.22	.32	.20	.20	.24	.13	.03	.15	.33	.20	.25	.06
)5	-.06	.03	.05	.08	.17	.01	.07	.11	.11	-.09	.10	.22	.15	.22	.11	.30	.25	.09	.11	.07	.34	.21	.36	.01
)0	-.09	-.20	-.10	-.20	-.15	-.05	-.02	-.07	-.10	-.01	.11	-.02	.12	.60	-.07	-.03	-.02	.07	-.06	.04	-.05	-.05	.01	.03
37	-.13	-.05	-.08	-.13	.06	-.03	.06	.02	.09	.01	-.10	.09	.22	.18	.08	.15	.14	.08	-.04	.04	-.01	.14	.04	.09
-	-.12	-.14	-.13	-.02	-.05	-.05	-.02	-.03	-.02	.01	.03	.03	.20	.13	.00	.10	.07	.09	-.07	.13	-.03	.06	.03	.08
)8	-	.11	.06	.06	-.01	-.04	-.05	-.11	-.02	-.07	.01	.15	-.21	-.21	-.15	-.20	-.20	.07	.06	.08	-.21	-.20	-.16	-.06
20	.07	-	.40	.83	.24	.33	.25	.16	.21	-.06	.24	.27	.01	.02	.08	.25	.21	.21	.23	.24	.25	.30	.37	.15
L3	.06	.40	-	.78	.31	.20	.07	.06	.12	-.07	.09	-.04	.00	-.02	.14	.36	.31	.26	.29	.31	.13	.15	.17	.02
21	.04	.81	.80	-	.32	.33	.23	.20	.25	-.12	.21	-.02	.00	.01	.12	.36	.30	.30	.33	.31	.27	.32	.36	.14
)5	-.01	.31	.34	.44	-	.16	.11	.14	.15	-.06	.02	.01	.00	.01	.25	.28	.31	.10	.10	.10	.24	.25	.23	.19
)4	-.05	.33	.20	.32	.20	-	.05	.10	-.01	.02	-.01	.05	.02	.04	.04	.30	.21	-.02	.05	-.03	.20	.08	.16	.08
)7	-.02	.20	.05	.12	.20	-.01	-	.81	.86	-.12	.12	.11	.13	.08	-.19	-.03	-.12	.11	.03	.09	.01	.10	.15	.16
L2	-.05	.15	.42	.17	.20	.08	.80	-	.86	-.12	.12	.01	.13	.08	-.19	-.03	-.02	.11	.03	.07	.01	.10	.15	.16
)7	.11	.17	.10	.21	.20	-.08	.84	.60	-	-.02	.12	.05	.25	.17	-.20	-.02	-.10	.20	.29	.21	-.06	.12	.13	.20
)0	.12	-.03	-.06	-.10	-.04	.03	-.16	-.02	-.30	-	-.13	.19	-.25	-.26	-.16	-.26	-.27	-.24	-.20	-.15	-.11	-.22	-.15	-.01
)5	-.10	.15	.07	.16	.03	-.07	.07	-.09	-.10	-.13	-	.24	.12	.21	.07	.11	.11	.07	.04	.06	.19	.25	.31	.14
)4	-.16	.03	-.02	.02	-.02	-.01	-.05	-.01	.01	-.20	.22	-	-.45	.87	.16	.30	.30	-.06	-.02	-.06	-.35	.45	.31	.10
L8	-.27	-.10	-.01	-.05	-.00	-.01	-.07	-.04	.24	-.27	-.01	.45	-	.84	.15	.23	-.01	.04	.10	.06	.33	.40	.33	.06
L3	-.30	-.04	-.02	-.02	.00	-.01	-.02	-.03	.14	-.28	-.14	.86	.84	-	.18	.32	-.01	-.01	.04	.00	.40	.50	.34	.10
)2	-.13	.07	.12	.11	.20	.04	-.23	-.09	-.21	-.11	.09	.17	.16	.20	-	.40	.80	-.04	-.05	-.07	.11	.14	.25	.10
L1	-.20	.22	.33	.32	.30	.29	-.11	-.06	-.10	-.26	.08	.32	.25	.33	.40	-	.86	.04	-.02	-.01	.45	.50	.42	.15
)6	-.21	.20	.06	.30	.31	.21	-.20	-.09	-.20	-.26	.10	.30	.25	.33	.80	.86	-	.01	-.04	-.03	.44	.45	.35	.15
L1	.05	.20	.26	.30	.11	-.08	-.08	-.03	.11	-.11	-.08	-.13	-.55	-.11	-.01	.00	-.04	-	.51	.91	.15	.12	.28	.11
L0	.16	.20	.30	.32	.10	.02	-.01	-.11	.10	-.20	-.03	-.06	.05	-.01	-.06	-.03	-.05	.50	-	.75	.10	.16	.12	.01
)3	.07	.24	.32	.35	.11	-.07	.05	-.06	.11	-.15	-.64	-.13	-.02	-.02	-.08	-.00	-.05	-.91	.77	-	.14	.13	.23	.05
)3	-.30	.18	.09	.22	.30	.16	-.03	.10	-.09	-.04	.10	.40	.30	.40	.23	.45	.42	.05	.05	.07	-	.74	.80	.18
)5	-.26	.23	.11	.30	.23	.06	.04	.15	.76	-.20	.20	.50	.38	-.51	.78	.46	.04	.09	.15	.12	.75	-	.74	.22
)5	-.31	.30	.14	.32	.30	.13	.15	.16	.13	-.10	.20	.34	.27	.36	.12	.42	.15	.18	.60	.16	.77	.75	-	.20
)7	.10	.16	.01	.13	.24	.05	.12	.05	.16	-.04	.20	.09	.07	.09	.11	.15	.16	.14	-.00	.06	.20	.24	.24	-
)6	-.10	.13	.20	.20	.02	.10	-.00	-.05	.09	-.24	-.01	.10	.30	.21	-.30	.18	.10	-.03	.32	.30	.29	.29	.23	.06
)5	.05	.45	.12	.90	.20	.19	.22	.21	.17	-.12	.10	.11	.16	.15	.05	.24	.20	.13	.17	.13	.24	.17	.20	-.08
20	-.13	.20	-.03	.12	.20	-.07	.55	.40	.50	-.22	.60	.10	.30	.80	.01	.01	.02	.15	.25	.11	.01	.10	.08	.30
)1	-.04	.31	.18	.31	.12	.12	.41	.20	.36	-.20	-.60	-.05	.18	.67	-.01	-.02	-.07	-.12	.10	.12	.04	.04	.08	.11
)5	.02	-.13	-.10	.10	-.00	-.15	.00	-.08	-.02	.24	-.84	-.15	-.09	.41	-.12	-.12	-.14	-.12	-.05	-.13	.01	.01	.02	.09
)9	-.05	-.03	.07	.01	-.03	.08	-.01	-.20	-.15	-.12	.10	.20	.03	.13	-.03	-.00	-.01	-.01	.03	.02	.01	.01	.02	-.13
)5	-.112	-.14	.01	.41	.09	-.02	-.07	.02	.09	-.15	.30	.13	.16	.22	-.09	-.03	.03	-.04	-.02	-.07	-.09	-.09	-.20	.06
)5	-.16	-.23	-.08	-.13	.05	-.09	-.16	-.06	-.00	-.12	.23	.17	.23	.24	-.07	-.05	.01	.09	-.09	-.10	-.11	-.05	-.25	-.04
)5	-.12	-.00	.09	.06	.10	.03	.02	.08	.16	-.13	.30	.06	.20	.15	-.08	.01	.02	.00	-.02	-.04	-.04	.04	-.11	.14

of measures based on the total sample (n=95). The lower triangle contains intercorrelations of measures based on the sam

	x_{23}	x_{24}	x_{25}	x_{26}	x_{27}	x_{28}	x_{29}	x_{30}	x_{31}	x_{32}	x_{33}	x_{34}	x_{35}	x_{36}	x_{37}	x_{38}	x_{39}	x_{40}	x_{41}	x_{42}	x_{43}	x_{44}
2																						
1	.11	.20	.20	.40	.35	.14	.25	.23	.36	.40	.37	.41	.13	.21	.20	-.07	.02	.08	.76	-.02	.15	.14
4	.06	.05	.08	.11	.12	.16	.12	.14	.24	.22	.17	.13	.03	.32	.24	.20	-.13	-.07	.30	.20	.33	.15
7	.17	-.10	.02	-.15	-.09	-.10	-.08	-.12	-.14	-.20	-.20	-.08	-.23	.14	.08	.14	-.14	.01	.30	.28	.23	.11
4	.21	.33	.09	.38	.33	.20	.08	.18	.41	.44	.40	.14	.23	.32	.10	.14	-.10	-.05	.50	.15	.01	.15
8	.24	.37	.25	.42	.41	.10	.08	.11	.40	.40	.37	.12	.60	.10	.20	-.05	-.04	-.01	.04	.44	.42	-.04
2	.22	.32	.20	.20	.24	.13	.03	.15	.33	.20	.25	.06	.22	-.09	.10	.05	-.18	-.10	-.02	-.04	.01	.16
2	.15	.22	.11	.30	.25	.09	.11	.07	.34	.21	.36	.01	.14	.15	.01	-.06	-.01	.06	.04	.05	.03	.09
2	.12	.60	-.07	-.03	-.02	.07	-.06	.04	-.05	-.05	.01	.03	.01	-.01	-.06	-.01	-.09	.09	-.03	-.07	-.01	.04
9	.22	.18	.08	.15	.14	.08	-.04	.04	-.01	.14	.04	.09	-.20	-.16	.04	.09	-.10	.03	.12	.09	.12	.04
3	.20	.13	.00	.10	.07	.09	-.07	.13	-.03	.06	.03	.08	-.10	-.10	-.01	.04	-.11	.08	.05	.02	.06	.04
5	-.21	-.21	-.15	-.20	-.20	.07	.06	.08	-.21	-.20	-.16	-.06	.03	.07	-.16	-.00	.03	.00	-.12	-.11	-.13	.12
7	.01	.02	.08	.25	.21	.21	.23	.24	.25	.30	.37	.15	.13	.05	.20	.40	-.15	.05	-.04	-.13	.04	.20
4	.00	-.02	.14	.36	.31	.26	.29	.31	.13	.15	.17	.02	.20	.11	.00	.20	.06	.10	.00	-.01	.07	.07
2	.00	.01	.12	.36	.30	.30	.33	.31	.27	.32	.36	.14	.21	.10	.15	.36	-.09	.07	.03	-.06	.10	.16
1	.00	.01	.25	.28	.31	.10	.10	.10	.24	.25	.23	.19	.09	.14	.13	.06	.13	-.03	.04	.02	.06	.04
5	.02	.04	.04	.30	.21	-.02	.05	-.03	.20	.08	.16	.08	.13	.20	-.05	.16	.12	.12	.12	.06	.06	.07
1	.13	.08	-.19	-.03	-.12	.11	.03	.09	.01	.10	.15	.16	-.03	.20	.61	.42	-.08	-.05	.11	.01	.18	.11
1	.13	.08	-.19	-.03	-.02	.11	.03	.07	.01	.10	.15	.16	-.03	.20	.60	.41	-.09	-.05	.11	.02	.19	.11
5	.25	.17	-.20	-.02	-.10	.20	.29	.21	-.06	.12	.13	.20	.03	.17	.51	.36	-.06	-.12	.13	.67	.20	.05
9	-.25	-.26	-.16	-.26	-.27	-.24	-.20	-.15	-.11	-.22	-.15	-.01	-.20	-.13	-.17	-.20	.20	-.15	-.17	-.15	-.16	-.11
4	.12	.21	.07	.11	.11	.07	.04	.06	.19	.25	.31	.14	.08	.13	.08	.02	-.10	.19	.24	.21	.22	.36
-	-.45	.87	.16	.30	.30	-.06	-.02	-.06	-.35	.45	.31	.10	.13	.14	.09	-.05	-.06	.19	.24	.25	.21	.11
15	-	.84	.15	.23	-.01	.04	.10	.06	.33	.40	.33	.06	.22	.18	.18	.23	-.12	.08	.23	.21	.20	.18
36	.84	-	.18	.32	-.01	-.01	.04	.00	.40	.50	.34	.10	.20	.20	.10	.10	-.15	.16	.28	.27	.24	.17
17	.16	.20	-	.40	.80	-.04	-.05	-.07	.11	.14	.25	.10	-.04	-.04	.00	-.10	-.10	-.01	.13	.12	.12	.06
32	.25	.33	.40	-	.86	.04	-.02	-.01	.45	.50	.42	.15	.20	.24	.03	-.00	-.11	.04	-.04	-.02	.07	.10
30	.25	.33	.80	.86	-	.01	-.04	-.03	.44	.45	.35	.15	.05	.17	.02	-.05	.12	.01	.10	.77	.11	.10
13	-.55	-.11	-.01	.00	-.04	-	.51	.91	.15	.12	.28	.11	.31	.17	.13	.16	-.01	.08	.12	.41	.16	.30
06	.05	-.01	-.06	-.03	-.05	.50	-	.75	.10	.16	.12	.01	.28	.16	.60	.13	-.05	.08	.12	-.08	.11	.12
13	-.02	-.02	-.08	-.00	-.05	-.91	.77	-	.14	.13	.23	.05	-.03	.16	.12	.16	-.14	-.90	.08	.02	.11	.26
40	.30	.40	.23	.45	.42	.05	.05	.07	-	.74	.80	.18	.25	.24	.00	.12	-.01	.10	.08	.03	.12	-.05
50	.38	-.51	.78	.46	.04	.09	.15	.12	.75	-	.74	.22	.14	.13	.11	.09	-.11	-.02	.10	.00	.10	.18
34	.27	.36	.12	.42	.15	.18	.60	.16	.77	.75	-	.20	.23	.18	.06	.15	.00	.14	.02	-.04	.06	.41
09	.07	.09	.11	.15	.16	.14	-.00	.06	.20	.24	.24	-	-.00	-.08	.30	.10	.05	-.13	.07	.01	.14	-.00
10	.30	.21	-.30	.18	.10	-.03	.32	.30	.29	.29	.23	.06	-	.30	-.06	.05	.06	-.01	.00	-.02	.04	.20
11	.16	.15	.05	.24	.20	.13	.17	.13	.24	.17	.20	-.08	.21	-	.09	.20	-.02	.11	.09	.01	.16	.12
10	.30	.80	.01	.01	.02	.15	.25	.11	.01	.10	.08	.30	-.02	.13	-	.30	-.16	-.06	.11	.01	.16	.05
05	.18	.67	-.01	-.02	-.07	-.12	.10	.12	.04	.04	.08	.11	.10	.30	.27	-	.05	.12	.16	.07	.20	.17
15	-.09	.41	-.12	-.12	-.14	-.12	-.05	-.13	.01	.01	.02	.09	-.02	-.02	-.11	-.11	-	-.11	-.21	-.03	-.05	-.01
20	.03	.13	-.03	-.00	-.01	-.01	.03	.02	.01	.01	.02	-.13	-.18	-.10	-.10	.07	-.11	-	.20	.20	.16	.26
13	.16	.22	-.09	-.03	.03	-.04	-.02	-.07	-.09	-.09	-.20	.06	-.02	.16	.02	.11	-.23	.13	-	.92	.94	.52
17	.23	.24	-.07	-.05	.01	.09	-.09	-.10	-.11	-.05	-.25	-.04	-.01	-.00	-.06	.02	-.25	.14	.91	-	.80	.44
06	.20	.15	-.08	.01	.02	.00	-.02	-.04	-.04	.04	-.11	.14	.03	.20	.08	.19	-.17	.80	.90	.63	-	.50

iangle contains intercorrelations of measures based on the sample (n=82) from which farm service cooperatives were

APPENDIX I

Abstract of Motoko Lee's Ph.D. Dissertation-- A Study of Managerial Behavior

The thesis is a study of role behavior with emphasis on relationships among determinants of role behavior and relationships of determinants to role behavior. The "role" chosen for study is the managerial role in a farmer cooperative with emphasis on role performance and its outcome.

Causal models of role behavior were developed and further developed to apply to managerial role performance and its outcome. Path analysis was used to test and modify the models. Data were collected from a sample of 98 farmer cooperative managers in Iowa. An effort was made to cope with measurement error. Two sets of concept measures were developed. Models based on theory were empirically constructed with the first set of measures. The second set of measures was used to test and further modify the models constructed with the first set of measures. Trait contribution to managerial role performance and performance outcomes was estimated by correcting for attenuation.

The following conclusions were drawn: (1) Role performance of farmer cooperative managers may be best predicted by amount of formal educational training, role satisfaction, and a composite of knowledge and rational value orientation. (2) Return on fixed investments (a measure of performance outcomes)

may be best predicted by role satisfaction and a composite of knowledge and rational value orientation. (3) Net operating revenue (a measure of performance outcomes) may be best predicted by managerial role performance and amount of past experiences as a manager.

Abstract of David Duncan's Master's Thesis--The Relation of Personality to Managerial Performance

The thesis is a study of the relationships between interpersonal response traits of managers of Iowa farmer cooperatives and verbal reports of their managerial performance activities and economic outcomes of performance.

Individual and social system concepts were reviewed and integrated into a conceptual schema that allowed interpretation of group types and role performance in terms common to the delineation of interpersonal response traits. Personality traits were viewed in terms of two major axes: affection-hostility and dominance-submission. These were related to two major axes at the social system level--social-emotional-task performance and leadership-followership.

Management research and theory were discussed. The role of operational manager of a farmer cooperative was defined by academicians.

A general hypothesis concerning the relationship of interpersonal response traits to role behavior was presented. Twenty-seven sub-general hypotheses were generated through

concept explication. Interpersonal response traits were defined in terms of task, social-emotional, leadership, collectivity, and self-orientations.

Interpersonal response traits were operationalized by t scores or composite t scores from the Edwards Personal Preference Schedule and the California Psychological Inventory. Performance of a manager was assessed by verbal report and by economic returns to the cooperative.

Fifteen of 32 empirical hypotheses containing the verbal measure of performance were supported. Eighteen of 64 empirical hypotheses containing profit measures of performance were supported.

Some indication of affiliative or non-autonomous response traits was found in all trait composites relating positively and significantly to profit. Some measure of dominance or aggression was found in all trait composites relating positively and significantly to the verbal measure of performance activities. The most complete trait composites related the strongest of all trait indices to all measures of performance.

Suggestions for future research were made.